

NOTES ON THE MEETING  
OF THE  
KLAMATH FISHERY MANAGEMENT COUNCIL  
HELD 1-2 MARCH 1990  
IN ARCATA, CALIFORNIA

1 MARCH

The meeting was convened at 9 a.m. by vice chair Sue Masten. Alternates attending were: Danny Jordan for C.L. Marshall, and Gary Smith for Charley Fullerton. Spike Naylor arrived late in the morning (see attendance roster, Attachment 1).

Correction and approval of minutes and agenda.

The following additions were requested to the printed agenda (Attachment 2):

- o Discussion of water issues and Bureau of Reclamation operations.
- o PFMC amendment process...whether the Klamath Council has additional options to harvest rate management they would like PFMC to distribute for public comment.
- o Guidance to Klamath Field Office on travel the Council feels is essential for conduct of Council business.

Update on pending legislation.

Sue Masten read an update, provided by Bruce Taylor, on current status of amendments to the Magnuson Act and on draft legislation related to high seas driftnetting (Attachment 3).

Review of fishery management plans proposed for 1990.

Spring chinook net harvest plan.

Craig Tuss provided a revised report on stock status and run size projection (Attachment 4), as requested at the last meeting. The run size projection is reduced to 16,000 from the projection of about 25,000 presented at the last Council meeting. Craig also provided Attachment 5, showing the effect (Table 17a) of varying levels of net harvest on other spring chinook harvests and escapements.

Sue Masten asked the Council to review Craig's material and provide recommendations on level of spring chinook net harvest. Council response is needed now so the commercial fishery won't be delayed as in 1989. Sue emphasized that the Yurok/BIA proposal is for a test commercial fishery, with an objective of gathering biological and market data. The level of the 1990

commercial fishery should not be considered an allocation of spring chinook harvest, and spring chinook harvest should not be allocated until more information is available on the stocks and on all harvests, including the ocean harvest (see Attachment 6 for details of the Yurok position). Comments included:

- o Q: Escapement goals for spring chinook? A: (Tuss): Trinity Hatchery needs 3,000 adult spawners. The Trinity Restoration Program has identified a goal of 6,000 natural spawners for the Trinity River, but biological basis of this isn't known... may just be an interim restoration target. No escapement goals for the Klamath side.
- o Q: Any run timing differences between Klamath and Trinity springs? A: Little direct information on Klamath or lower Trinity stocks.
- o Q: Your proposal is a test commercial fishery target of 5,000 springs, plus the Yurok and Hoopa subsistence harvests? A: Yes.
- o (Martin): Tuss's data (Attachment 5) indicate the additional harvest you propose make it unlikely that escapement needs of Trinity Hatchery would be met. I suggest the Indian community adjust subsistence harvests to allow for a commercial spring chinook fishery within an overall target for net harvest. Note that run size could deviate well below Craig's projection, and we should consider that possibility. Response (Masten): Do you propose to reduce other fisheries proportionately, in consideration of the projected small run of springs?
- o (Martin): This has already happened. Ocean harvest rate for springs is much less than for falls...maybe 2/3 as high. Reduction in the KMZ troll fishery to protect Klamath falls apparently has had the effect of reducing ocean catch of springs. This is reflected in increased Trinity River escapements of recent years. Response (Masten): If the Council finds that 1990 stock size is too low to permit a commercial net fishery, other fisheries taking Klamath springs should be reexamined.
- o Would like information on impacts of the proposed fishery on summer steelhead. Response (Tuss): 1989 commercial spring fishery took an estimated seven steelhead. Net mesh is 7 - 7 1/2", and steelhead tend to swim through.... summer steelhead are smaller than winter run.
- o (Jordan): Concerned that the State of California seems to be managing spring chinook sport angling only coincidentally ...no special regulations proposed. Response: State proposal is to continue managing the river sport fishery as in recent years.
- o (Masten): Chairman Fullerton requested that all fisheries planned for 1990 be brought to the Council for review...yet only the Yurok/BIA proposal has been provided... we have nothing to review on other spring chinook fisheries (see Attachment 6 for more development of this point). This gives the appearance of discrimination. Maybe the

Council needs operating procedures stating how plans will be brought for review. (Jordan): Concur...seems like spring chinook and coho are on the agenda only because of Indian proposals to target those stocks for harvest. If other fisheries taking these stocks are not going to be reviewed by the Council, maybe we should go back to concerning ourselves solely with fall chinook.

- o (Martin): I would prefer to see ocean spring chinook impacts treated as incidental to the fall chinook fishery.
- o (Masten): This does not appear to meet requirements of the Klamath Act.
- o (Reed): On the issue of discrimination against Indian harvest plans, it is not surprising that attention should be focussed on a new fishery in a year of low abundance. Response (Jordan): Indian harvest of springs should not be treated as "new".
- o (Martin): The commercial fishery is new, and we should review it closely. We don't need to examine ongoing fisheries, such as the gillnet subsistence fishery, in the same degree of detail. (Bingham): Concur...don't see a need for elaborate written plans, every year, for ongoing fisheries... we have been provided with all the data available on estimates of ocean catch of Klamath springs... not much more to report.
- o (Masten): Again, look at requirements of the Klamath Act.
- o (Martin): We will make a recommendation for the 1990 KMZ ocean sport fishery.
- o (Masten): Again, we are seeking your recommendations on size of net harvest. We will adjust to consider Craig's new, lower run size projection.... and we can make inseason adjustments of harvest. We intend to protect spawning escapement needs of natural stocks and Trinity Hatchery.
- o (Warrens): To estimate impacts of your proposal, should we be looking at about the fourth line down in Table 17a (Attachment 5)? (Masten): Yes.
- o (Jordan): We plan on harvesting springs within the range of our traditional subsistence take. Suggest you treat the total net harvest as one allocation.
- o (Martin): I hear your proposal about as follows: You would set a harvest target of about 6,000 adult springs. Subtracting subsistence, this would leave about 2-3,000 for the commercial harvest, size of which would be adjusted depending on size of the subsistence harvest. I am satisfied that your proposal to delay commercial harvest until late May will allow natural spawners to pass through, but am concerned about projected returns to Trinity Hatchery, which Craig predicts at

2100-2300, for the proposed level of net harvest. This is below hatchery need. What could be done if the hatchery failed to get egg needs?

- o Discussion of this eventuality: Many "natural" spawners projected for the Trinity would enter the hatchery ladder if it is left open; State policy would discourage egg shipments from other basins; Egg shortage would mostly impact the fingerling release program.
- o Q: Is inriver mortality of adult springs factored into Tables 17 and 18, Attachment 5? A: (Tuss): No.
- o (Reed): The commercial net harvest proposal, as now being discussed, addresses my concerns. The target harvest size should not be considered an Indian allocation... it is small because of projected low stock abundance. The test fishery aspect should be emphasized... need to monitor closely to collect needed data, and also need to upgrade monitoring of river sport fishery and spawning escapement. This would provide an informed basis for future allocation of spring chinook harvest.

#### Fall chinook net harvest plans.

##### Total harvest rate and harvest allocation.

Discussion of harvest rate and escapement rate for Klamath fall chinook included the following:

- o (Masten): Yuroks are committed to the .33-.34 escapement rate recommended by the Technical Advisory Team and the PFMC.
- o (Bingham): Trollers have concerns about harvest rate management as we are practicing it.
- o (Reed): Nat, given the small run size projected, which approaches the 35,000 floor for natural escapement, are you proposing an escapement rate below .33-.34? I agree ocean fisheries are heavily regulated, and we need to find ways to lighten the burden. (Bingham): Given the PCFFA lawsuit on Amendment 9, I would abstain on any motion supporting the harvest rate concept.
- o (Martin): In 1989, Oregon recommended a one-year deviation below the .33-.34 escapement rate, but were told this would be very difficult to justify to the Secretary of Commerce... so I think we should take the escapement rate as a given and proceed to harvest allocation.
- o (Smith): I understand our objective to be to provide a small range of workable allocation options to PFMC.

Sue Masten concluded there is Council support, with one abstention, for an escapement rate of .33-.34 for fall chinook (no vote taken), and discussion

can be directed to harvest allocation. It was decided to post allocation proposals on the wall, for discussion.

Sue distributed information (Attachment 6, pages 3 and 4) on postseason estimates of harvest allocation for past years.

Yurok allocation proposal.

- o Ocean/inriver harvest rate = .30/.60.
- o Projected harvest of Klamath fall chinook = 75,000 ocean, 42,000 inriver.
- o Rationale:
  - oo Provide equity...make up for low inriver harvest rates of past years.
  - oo Meet subsistence needs and provide a commercial gillnet harvest of about 10,000 fish.

Clarifying discussion included:

- o Q: Doesn't this harvest rate combination violate the 5-year agreement?  
A: (Masten) Yes...but the harvest rate combinations have violated the agreement every year since it was written - in favor of ocean harvest.

California ocean troll fishery allocation proposal.

- o Ocean/inriver harvest rate combination = .50/.30.
- o Projected harvest of Klamath chinook = 125,000 ocean, 14,000 inriver.
- o Rationale:
  - oo Meets minimum needs of the ocean fishery.
  - oo Allows ocean fishery reasonable access to other stocks.
  - oo Given that the 5-year agreement is inoperative, this combination returns us to principles worked out in 1985 negotiations.

Hoopla allocation proposal.

- o Ocean/inriver harvest rate combination = .35/.525.
- o Projected harvest of Klamath chinook = 87,000 ocean, 34,000 inriver.
- o Rationale:
  - oo Meets 5-year agreement.
  - oo Provides consistency...adheres to a long-term allocation agreement.
  - oo Protects the database from effects of year-to-year changes in harvest rate combination.

- oo Appropriate for the 1990 stock size estimate, which is about what the 5-year agreement was written toward.

Clarifying discussion included:

- o (Jordan) This allocation may not meet basic inriver needs.
- o (Jordan) Database is too valuable to be compromised by shifts in harvest rate combination... we have some years of high escapements that increase database value.

Department of the Interior proposal.

(Reed): Agree with Jordan... let's stay with the harvest rate combination of the 5-year agreement - it is appropriate for the projected 1990 stock size.

Inriver sport fishing proposal.

(Bostwick): Concur with Jordan and Reed - we are back to the abundance levels that led to the 1987 agreement. Agree with Danny that 34,000 may be below needs of inriver harvesters.

Oregon harvesters' proposal (Wilkinson).

- o Ocean/inriver harvest rate combination = .40-.41 / .45-.44.
- o Projected harvest of Klamath chinook = 100-102,000 ocean, 27-28,000 inriver.
- o Rationale (see Attachment 7):
  - oo Each user group meets originally-identified needs.
  - oo Responds to new information on contribution rates of outside ocean areas.
  - oo Provides equity, in terms of original agreement principles; each fishery reduces harvest about 20% from last year.
  - oo Meets minimum economic needs.
  - oo Provides for a troll fishery in the KMZ.

Clarifying discussion included:

- o (Masten): The 1987 allocation agreement didn't include the commercial net harvest as a minimum need of Yuroks, but we now feel that it is.
- o Does this proposal represent a consensus of Oregon harvesters?  
(Wilkinson): Yes.

Ocean sport angling proposal (Hayden).

Concur with Wilkinson's proposal.

The user group proposals were tabulated by Jim Martin as follows, with 1989 statistics provided for comparison:

Proposer	Ocean/river harvest rate combination	Projected ocean harvest	Projected inriver harvest	Projected commercial net harvest
Yurok	.30/.60	75,000	42,000	10,000
Hoopa	.35/.52	87,000	34,000	5,000
Oregon	.40/.45	100,000	28,000	zero
PCFFA	.50/.30	121,000	14,000	zero
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1989 PFMC objective	.375/.49	93,000	67,000	
1989 actual	.44/.45	108,000	55,000	26,500

Discussion of the allocation proposals included:

- o Appears all proposals meet the total harvest rate criterion, except - possibly - the PCFFA proposal.
- o Q: Did the original principles of agreement include a harvest floor for ceremonial/subsistence? A: (Jordan) Understanding was that special measures would be taken if gillnet catch was projected below 12,000.

Review of proposed fall chinook harvest allocations.

Discussion of the options tabulated above included the following:

General Discussion:

- o (Martin): To be realistic about options PFMC would consider, let's drop the Yurok and the PCFFA proposals, and send to PFMC a range of harvest rate combinations in the middle range.
- o (Masten): The best the "middle range" of options would give us is a 5,000-fish commercial harvest... a much more severe reduction from 1989 than for the ocean harvest. If stocks are this low, let's look at closing the ocean fishery.

- o (Bingham): Adverse impacts are comparable in the two fisheries when you consider there are ten times more licensed harvesters in the troll fishery than in the gillnet fishery.
- o (Masten): Troll fishery can access other stocks... suggest you shift effort to those in 1990.
- o Q: What are ceremonial/subsistence needs in a low-abundance year? A: (Jordan) We have made the mistake in the past of identifying a number and having it used against us... don't wish to do so again. Subsistence harvests of past years don't represent our true subsistence need, since they were constrained for conservation of spawner escapement.
- o (Martin): To understand the tribal proposals I have to be told how you calculate estimates of commercial harvest... which means I have to know your estimate of 1990 ceremonial/subsistence.
- o (Masten): For Yuroks, you could figure 10,000 fish in the estuary, and 6,500 in Area II, based on past harvests.
- o (Martin): So it appears you calculate allowable commercial net harvest by:
  - oo Multiplying the inriver harvest allocation by 3/4 to estimate the Indian share.
  - oo Multiplying the Indian share by 4/5 to estimate the Yurok share.
  - oo Subtracting 16,000 from the Yurok share to estimate allowable commercial harvest.
- o (Masten): Yes. Remember, we don't consider subsistence to be negotiable.
- o (Reed): Given that stock abundance in 1990 is about at the level of the mid 1980s, why can't we agree on the allocation contained in the 1987 agreement, as Jordan proposes? (Bingham): Because impacts of that allocation are greater than we anticipated... 50% reduction in fishing opportunity in outside areas, and more than that in the KMZ. (Masten): The inriver fisheries have been shorted every year since the agreement was signed... our proposal attempts to redress some of that inequity.
- o (Wilkinson, Reed, Warrens, Naylor): Agree with Martin that the best we can probably do is agree on a fairly narrow range of harvest rate combinations... let's try to do that in this meeting.

Discussion ensued as to whether it would be sufficient to agree on a range of harvest allocations, or whether there should be an attempt to identify acceptable/unacceptable regulatory measures to achieve the allocations. Example: Whether to request the PFMC to provide for a KMZ troll fishery in their public comment options.

(Martin): I understand the desired product of this discussion to be: a range of ocean/inriver harvest rate combinations, with matching escapement goals; and some recommended management options, such as provisions for KMZ fisheries.

It was left that Council members would estimate management/dampening measures needed to meet objectives of each allocation option, then report these to the group tomorrow.

Sue Masten commented again that only Yurok/BIA managers have provided the Council with a written harvest plan for review... provided at the last Council meeting. The Council should formally adopt procedures for requiring these plans, and for content of plans. Klamath Field Office should review and report on requirements of the Klamath Act on this matter.  
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#### Oregon proposal.

- o Q: Does the calculation of 20% harvest reduction refer to Klamath impacts only? A: (Wilkinson) Yes.
- o (Masten): I don't agree that this proposal reduces all harvests equitably. The projected inriver harvest of 27-28,000 is only 1/2 - 1/3 of harvests of recent years.
- o (Boley): The Oregon proposal is for a reduction of about 20% from the minimal needs defined in the 1985 discussions - not reductions from recent harvest levels.

#### Proposed river sport fishery (includes some discussion of spring chinook fishery).

Discussion included:

- o (Masten, Jordan): The Council has never reviewed and commented on CDFG sport regulations and harvest monitoring plans... we need to do this. Response (Odemar): We provided a detailed report on monitoring of the fall sport fishery at the last meeting. (Naylor): To review regulation changes, the Council needs to consider the schedule of the California Fish and Game Commission, where regulations are adopted. We will insure the Council is on the Commission mailing list.  
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- o (Odemar): The only river regulation change we were considering was in angling hours, to benefit gillnetters. There was no support for this at the inriver harvesters' meeting 15 February, so I removed that item from the package of CDFG recommendations to the F&G Commission. Klamath Council should look over the recommendations of the inriver harvesters from their 15 February meeting (Attachment 8). If you see a need for regulation changes, let us know. (Masten): Inriver sport representatives agreed to educate anglers to move out of the way of

nets being set, so we felt a regulation was not needed. Likewise, netters will move accommodate travel of sport boats.

- o (Bostwick): Inriver harvest sharing will remain as it has for several years: 25% sport, 75% Indian.
- o Q: Level of confidence in the estimates of sport take? A: (Baracco): For fall chinook, our standard is +/-20% of the estimate, at 95% confidence. For the Trinity spring chinook fishery, we haven't calculated confidence interval...probably pretty wide.
- o (Reed): Seems prudent for the Klamath Council to advise CDFG that more extensive harvest monitoring is needed for angler harvest of spring chinook, given the low state of the run. (Odemar): You are assuming our harvest estimates are poor. Let's confirm that before we commit to more monitoring effort. I think a better use of resources would be improved estimates of run sizes of natural stocks.
- o (Jordan): Notes voiding of interagency Memo of Agreement on law enforcement...because of State law on cross-deputization.

KMZ sport harvest (Martin).

Jim reported on the February 16 ocean harvesters' meeting which produced the proposal he will describe (see Ocean Harvesters minutes Attachment 9). Issues identified at that meeting included:

- o Concern over the unanticipated large sport chinook harvest in the KMZ in 1989... about three times the harvest projected by the Klamath Ocean Harvesters Model (KOHM).
- o Concern over the high Klamath contribution rate to the 1989 KMZ sport fishery... estimated Klamath chinook take was around 17,000, compared with predicted 7,000.
- o Desire to insure against another runaway fishery, in 1990.

The ocean harvesters' proposal for a 1990 KMZ sport fishery includes:

- o Season: 1 May-9 September...an earlier closure than in 1989.
- o Special seasons: Eel River fishery (Punta Gorda to Trinidad Head, to six miles offshore) until October 31. This is the same as the special Eel troll fishery in 1989. A special late Chetco fishery would also be considered.
- o Bag limit: 2 salmon/day, 6 fish in 7 days. Dampening requirement, from 1 July to 15 August, of no more than one chinook per day. In 1989 a ratio fishery was written into regulations but was not implemented because it was tied to a harvest trigger that was not reached.

- o Sport quota: none.
- o Rationale:
  - oo With the ratio fishery dampener in place, this proposal should meet sport fishery needs without undue Klamath impacts.
  - oo Helps KMZ ports.

Discussion:

- o Q: Much problem with sport anglers distinguishing coho from chinook?  
A: Don't think so...Oregon regulations include a species key.
- o Q: Sport hooking mortality? A: Probably less than 1/4.  
(Baracco) Much depends on species ratio in the catch. If coho are scarce, there could be many chinook thrown back during the ratio fishery, and more mortality. Another issue: Sublegals are thrown back quickly, with less mortality, but legal-size fish have higher hooking mortality. Under some conditions, a ratio fishery can be wasteful.
- o Q: CPUE during hot fishing in KMZ last July?  
A: About 1 fish/angler/day.
- o Q: Estimated harvest in KMZ after 1 September 1989?  
A: About 1200 chinook.
- o Q: Expected total chinook harvest and Klamath impact of 1990 KMZ sport fishery? A: Total harvest about 23,000 - similar to projection for 1989 - with Klamath impact about 8,000 chinook. The KOHM is not very accurate in predicting KMZ sport catch.
- o Q: Any notion of how effective a ratio fishery would have been in dampening the 1989 harvest, had it been triggered? A: No analysis.
- o Q: Is monitoring of ocean sport harvest timely enough that we can be confident the dampening measure will work? A: About a week of lag time in monitoring catch data.
- o (Hayden): To put the big 1989 KMZ sport fishery in perspective, it still took only about 10% of the total harvest of Klamath chinook.
- o Q: Why no sport quota? A: To remove uncertainty about season length.
- o Q: It appears technical analysis of this option is incomplete - correct? (Baracco): I will advise the Salmon Technical Team to model the proposal at "full impact" = good weather. This would test effectiveness of the ratio fishery as a dampener. With average catch rate of <1 fish/angler/day, the dampener wouldn't do much. Harvest from that kind of fishing is projected at about 20,000.

- o (Masten): Given the fishing power of the KMZ sport fleet, and the projected low run size, I would like the Tech Team to look at effectiveness of the dampener.  
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- o (Martin): We can expect PFMC to put this option through technical analysis, if it goes out for public review.
- o (Hayden): 1989 was an unusual year...KMZ sport fishery may not do as well again for many years.

#### Proposed net fisheries.

##### Yurok/BIA proposal.

(Masten): Our proposal for commercial and subsistence harvests of fall chinook on the Yurok Reservation was provided last meeting (see Attachment 15 to notes of 5-6 February meeting). Any comments?

- o (Martin): Appreciate your intent to focus effort on Trinity 3s ...this will spare scarce 4s. (Masten): We are still getting comments from Yurok members on this option, as well as from the Klamath Council... this is still just a proposal. We would want to get credit for increased vulnerability of 3s, in terms of increased harvest allocation.
- o Q: When will BIA regulations be ready? A: Should be pretty firm by next week.

##### Hoopas proposal.

(Jordan): Hoopas plan to experiment with a nonfatal fishing method, such as a weir. This would allow targeting on hatchery fish.

##### Discussion:

- o If Hoopas will be able to sort live fish, shouldn't the Council ask CDFG to mark hatchery fish to facilitate this? Maybe the Klamath Fishery Restoration Program could fund.
- o Would want to see that the nonfatal fishing technique is effective before investing in extensive marking.

#### More on proposed ocean troll fisheries.

(Discussion deferred to tomorrow)

Proposed 1990 coho salmon fisheries.

Ocean fisheries.

(Martin): Coho are managed as an aggregate of Oregon and California coastal stocks. Management objective is to protect spawning escapement of natural stocks. Harvest rate objective is .5. At low stock size, allocation shifts from troll to sports. Coho abundance in 1990 is projected to be low, so coho available to trollers will be down substantially from 1989... which means less opportunity to substitute coho for chinook.

Discussion included:

- o Q: Any information on impacts of ocean fisheries on Klamath coho?  
A: Only information is on impacts on the aggregate stock. Ocean stock size of Klamath coho is unknown. Only abundance information is on hatchery returns, and some sport harvest data.
- o (Masten): Request a Tech Team report on data available on Klamath coho. (Martin): Good idea, but don't expect the level of sophistication we have on Klamath chinook.  
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Inriver fisheries.

See last page of Attachment 6 for Yurok/BIA position statement on Klamath Coho stocks.

2 MARCH

Discussion of ocean fall chinook fisheries proposed yesterday.

Alan Baracco distributed Attachment 10, displaying management (dampening) measures associated with the several proposed ocean harvest rates.

The first page displays projected landings of Klamath chinook calculated by applying harvest effort and stock distribution data, averaged over 1986-89, to the projected 1990 stock sizes for Klamath, Sacramento, and Rogue chinook stocks. All time/area cells are set to a base exploitation condition (full seasons north and south of the KMZ, full sport season in the KMZ, and a KMZ troll quota of 46,000).

The second page displays 1990 Klamath impacts with dampeners like those of the 1989 season being applied. Note how two-week block closures cut the Fort Bragg fishing effort, but also shifted fishing effort to the south. Note also that a KMZ sport chinook catch of 23,100 (Klamath impact of 6330) is projected.

The third page of Attachment 10 displays effects of various combinations of dampening measures in achieving the various levels of ocean harvest rates called for in allocation options presented yesterday.

Discussion of page 3 included:

- o Q: Do block closures apply to same areas as last year? A: yes.
- o Q: Did you consider a KMZ quota of 15,000? A: No. The three levels of KMZ quota considered (46,000, 25,000, and zero) were chosen arbitrarily, for illustration.
- o Q: What is your confidence in the effort reductions for 3 days on / 4 days off? This dampener could be more effective than you display here... may cause large boats to leave the area. A: No confidence limits... no history of use of this dampener... our findings are based on experience in the Fort Bragg fishery in 1988, when we saw little effort reduction from 4 on/3 off fishery. We assume that 3/4 and 4/3 would be .75 and .5 respectively, as effective as the same number of days of block closures.
- o Q: How would the block closures be distributed north and south of the KMZ? A: They would not have to be simultaneous, although the biggest effect in both areas would be in July.
- o Q: Would Salmon Technical Team accept this analysis? A: There would be some discussion, but I don't expect their conclusions to differ much from ours.
- o Q: The .30 ocean harvest rate option seems to cut the heart out of the Fort Bragg and Coos Bay fisheries, as well as KMZ troll ...so where would the fish be caught? A: KMZ sport, north Oregon, San Francisco, and some Coos Bay and Fort Bragg catch.
- o Q: Where are sport fisheries in Coos Bay and Fort Bragg accounted? A: Lumped with troll fishery, because these are small fisheries. We did not assume, however, that sports would be subject to block closures.
- o Considering how stringent these dampeners will be on the troll fishery, shouldn't we give more thought to reducing sport fishing to spread the pain? (Martin): Might be politically valuable, but the KMZ sport catch is projected to include only 7-8,000 of 93,000 Klamath chinook projected to be caught in the ocean - assuming 1989 regs - so there isn't much to be gained by cutting the sport fishery.
- o Attachment 10 doesn't appear to consider the ratio fishery dampener proposed for the KMZ sport fishery. (Baracco): I don't think that dampener will have much effect, given low stock size. The ratio fishery is still a good idea, in giving protection in the unlikely event of high fish availability.

- o (Masten): Assuming ratio fishery is not going to affect Klamath impact, am concerned about possible excessive sport catch of scarce 4s. Response: Page 2 of Attachment 10 shows sport catch of 4s is mostly in July and August, which is the period of the proposed ratio fishery. More constraint of sport catch will impact KMZ ports, and will reduce catch of coho and other chinook stocks.
- o (Hayden): We have seen ample evidence that the KMZ sport fishery has little impact on Klamath chinook, so propose we stop considering any further dampening of that fishery. (Martin): No fishery is exempt from these negotiations. North Oregon sport anglers face a constrained coho season, and are concerned about the relatively unconstrained coho sport fishery in the KMZ... and will express themselves at PFMC.
- o (Reed): Suggest that, in future years, the analysis of dampeners include consideration of block closures for the KMZ sport fishery. (Bostwick): But, remember the importance of an assured season length for sport angling.
- o (Warrens): I share concerns about effectiveness of KMZ sport dampeners. North of Cape Falcon, we have had sport seasons of 9 and 25 days in the last two years... KMZ sport fishery seems relatively unconstrained.
- o (Bingham): Would like to see increased enforcement of sport fishing regulations in the KMZ... concerned that CDFG is shorthanded.
- o (Martin): Page 3 of Alan's material (Attachment 10) illustrates why the 5-year agreement hasn't worked. Look at the fourth line down... ocean harvest rate = .35, which was the rate agreed to in 1987. If trollers had known at that time that a 38-day block closure would be required to dampen harvest to a .35 level, I doubt Nat would have signed. We thought that ocean fisheries outside the KMZ took a total of 25% of Klamath chinook 4s, when in fact the impact is much greater. (Masten): No, we inriver harvesters knew about the high outside contribution rates, and built this information into our negotiations. (Martin): Am surprised at this... thought we were all working from the same base of technical information.
- o (Martin): Let's review options displayed on Baracco's page 3. I submit that the proposal for a .50 ocean harvest rate will not be considered by PFMC... impacts on river fisheries are too severe. Now we see the constraints needed to achieve an ocean harvest rate of .30, and I think they are too severe for PFMC to consider that option, either. I again request that we drop these two options from our discussion. (Reed, Warrens): Concur.
- o (Martin): Let's send PFMC a range of ocean harvest rates from .35 to .40, plus a list of concerns, such as: loss of commercial net fishery, and block closures of troll fisheries.

- o (Bingham): Seems like we are sending a list of options that leave neither group with viable fisheries. At least the extreme options keep one group in business.
- o (Martin): The problem Nat just stated can only be solved by finding new ways to manage Klamath fish stocks, such as targeting hatchery stocks, or other species. We need to get out of being held to small harvests by the harvest rate limitation imposed to protect wild chinook stocks.

At this point, Craig Tuss was seated as alternate to Lisle Reed. Council members were asked to meet with constituents, during a break in the meeting, to review fall chinook harvest allocation proposals.

#### Review of proposed 1990 coho salmon fisheries.

(Masten): Inriver representatives have nothing to present. We hope for an incidental catch of coho in the fall chinook net fishery. There will be time in future meetings to present any information we may get on projections of this incidental catch.

(Martin): As discussed yesterday, I would prefer to hear discussions of incidental catches presented with proposals for the target fishery. I would be satisfied with a postseason report on coho catches.

(Masten): Tech Team has been assigned to assemble information on Klamath coho and present to the Council at some future meeting.

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#### Other harvest plans proposed for 1990.

(Masten): The only other anadromous fishery we plan is a lamprey fishery, from about October through April... fishing by basket traps, hooks, or dipping.

#### New business.

##### Travel reimbursement.

Ron Iverson requested some Council guidance on meetings Council members or technical staff should attend for conduct of Council business. Klamath Field Office can reimburse travel costs of some members and staff, but the Council has never formally identified which meetings are essential to the Council mission.

Following activities were identified:

- o Council meetings to be attended by Council members, the Tech Team chair, and Tech Team members designated by the Team chair.
- o Tech Team meetings to be convened by the Team chair, and attended by Team members.

- o User group meetings to be attended by Council representatives of appropriate user groups, and with technical support as assigned by the Tech Team chair. Travel for the purpose of user group networking should be approved by the Council and Tech Team chair on an ad hoc basis.
- o PFMC meetings, including subgroup meetings, to be attended by the Tech Team chair and Team members designated by the chair.
- o Other technical meetings, such as discussions of water resources, to be attended by the Council chair's designate on an ad hoc basis.

Craig Tuss noted that all Federally-reimbursed travel must be formally authorized, in writing, in advance, which means adequate notice must be provided to Klamath Field Office.

Klamath Field Office will amend the travel section of the Council Operating Procedures to reflect the above discussion, and will present a draft for Council review.

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#### Bureau of Reclamation water update.

The Council decided to request reporting on Trinity flow projections and Central Valley Project operations, on a regular (at least annual) basis. Klamath Field Office was assigned to contact the Bureau of Reclamation for this purpose. Next Council meeting will be an appropriate time for a brief report from the Bureau. Lisle Reed left word that any specific questions or concerns should be identified to the Bureau in advance of their presentation, to allow them time to prepare responses.

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Concerns identified included:

- o Plans for water transfers in 1990.
- o How the Bureau has altered their water allocation process to take fish needs into account.
- o Status of redraft of water marketing EIS.

#### Funding information collection/analysis needed for ocean harvest management

(Masten): Lack of information is a recurring problem for us. We need to let the Klamath Task Force know of this need, and urge them to provide funding.

Discussion included:

- o Task Force is most interested in studies that yield information on productivity of the Klamath basin for anadromous fish, to guide restoration measures. Restoration Program funding is limited.
- o (Martin): This agenda item was requested by Lisle Reed, who told me he had in mind a symposium or other fact-finding about dynamics of ocean mortality, and factors driving the apparent cycle of salmon abundance, of which we are now seeing the down side. We should ask the Task Force to consider funding such a symposium.

The Council agreed to make a proposal to the Klamath Task Force for funding in Fiscal Year 1991. Technical Advisory Team is assigned to provide a list of information needs to be presented at the next Council meeting. A proposal would then be written for submittal to the Task Force.

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#### Review of notes of previous meetings.

Changes requested:

#### Notes on ocean harvester's meeting (Attachment 9:

- o On page 5, the season proposed by California sport anglers was to close 31 October, not 1 October.
- o Attachment 3 table entry for Indian net catch should be 45,600 - not 55,396.
- o Attachment 3 entry for 1988 spawning escapement should be 112,344, not 113,644.

Notes on ocean harvesters' meeting of 16 February were approved with those changes.

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#### Notes of Council meeting of 5-6 February 1990.

(Bingham): Page 6, Leonard Masten's law enforcement report: Add information on numbers of fish seized in the two cases of illegal transport (74 seized in Redding, 75 seized in Garberville).

(Warrens): Correct comment attributed to Warrens, middle of page 3: The Federal law violation he was referring to is actually the requirement of operators to be federally licensed. Should read: Frank Warrens suggested Federal court prosecution for operators in violation of that law which requires operators to possess a U.S. Coast Guard license.

Minutes of the last Council meeting were approved with those changes.

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Inriver harvesters' meeting of 15 February 1990.

Review of these minutes was deferred.

Public comment on proposed harvest plans.

Comments included the following:

(Yurok member):

- o Klamath Council should support the option that provides inriver harvest of 34,000....would at least provide a small commercial net harvest.

(Charterboat representative):

- o Council should approve the KMZ sport regulations presented to you by ocean harvesters... would provide a reliable, and fairly long, season.

(Trout Unlimited representative):

- o Concerned about declining steelhead numbers... the proposed late gillnet fishery, using small-mesh nets, may harvest steelhead.

(Eureka troller):

- o Minimum need of trollers is .50 ocean harvest rate, which will still be a reduction in catch of Klamath chinook from recent years. Ocean harvest rates in the low thirties mean shutdown of troll fishing.
- o Troller support is needed in political battles over water, timber harvest, other issues vital to Klamath fish restoration... don't force us to again withdraw our Salmon Stamp funding, and political involvement, by shutting us down to protect Klamath stocks.

(Humboldt Fishermen's Marketing Assoc. representative):

- o 20-fish day limit in 1989 KMZ troll fishery was impractical... shows managers don't understand troll fishery operation and economics.
- o Need to improve access to hatchery stocks.
- o Need to rebuild all North Coast stocks at comparable rates, so harvest of other stocks isn't always constrained by Klamath stock management.
- o Suggest you allow some public comment at the beginning of each Council meeting.
- o Klamath Council should make some definite findings as to which factors are limiting fish restoration.
- o How about opening Council meetings with a prayer?

- o Q:(Bingham) Any other fisheries salmon trollers can turn to?
- A: Crab season was poor... some boats went to Washington for crab... some have fished rockfish, but resource and market are limited...evidence of overfishing of rockfish around Eureka.

(Humboldt Bay Harbor District representative):

- o Understand all the Trinity Restoration Program money is going to administration... nothing left for restoration work.  
(Naylor): Will look into this.
- o KMZ day boat trollers feel they are forgotten, lack representation on the Council. How about providing the same season in the KMZ as in outside areas?

(Charterboat operator):

- o Concerned about comments on a "runaway" KMZ sport fishery. In an average year, that fishery takes only about 2% of the Klamath chinook harvest. In 1989 it took about 10%, but that may not happen again for years.
- o Council should adopt the ocean harvester's recommendation for KMZ sport regulations.
- o Council should allocate percentages of Klamath chinook impact, rather than numbers of fish.
- o Klamath ocean harvest modeling should use more than just recent years as a database.

(Moss Landing troller):

- o Minimum economic need of trollers is about 150 salmon/year for small boats, 300/year for large boats. This equates to 600,000 fish for the California fleet. To get this in 1990, we need the .50 ocean harvest rate proposed by Bingham... this is our minimum need.
- o KOHModel inappropriately uses high abundance years as base years... exaggerating Klamath contribution rates projected for outside areas.
- o Don't dismiss the 4/3 dampener... it could be effective. By changing base years and changing assumptions about 4/3 dampening effect, the modelers might predict adequate harvests for both ocean and river.

(Yurok member):

- o A 5,000 fish commercial net harvest amounts to about \$250 per gillnetter... doesn't cover the cost of a net.

(Independent Troll Fishermen of Oregon representative):

- o Troll fishery can't withstand two-week block closures... market is taken away by Norwegians.
- o Look again at 4/3 fishery... data from Fort Bragg on effect of start/stop dampener on effort was inaccurate.
- o Options the Klamath Council is considering would cut Oregon troll coho harvest.
- o More accurate estimates of spawning escapement are needed... believe they would reveal there are more harvestable fish.
- o Congratulations on congenial working relations we see among Klamath Council members.

(Yurok member):

- o Supreme Court has said that Indians can't be discriminated against in conservation regulations.
- o PCFFA option looks like an effort to do away with the commercial net fishery...has racial overtones.

(Yurok member):

- o We must buy new 6 1/2" nets to target on Trinity Hatchery 3-year-olds...hard to pay for these from a 5,000-fish commercial catch.

(Shelter Cove troller):

- o Shelter Cove fleet is small boats fishing near shore... probably have a lower Klamath contribution rate in their catch than the Fort Bragg troll fleet.

(Trinidad City Council member):

- o Wrongs allegedly perpetrated against the Yuroks should be redressed by society as a whole, not just the ocean fishery.

(Charterboat operator)

- o Concerned about joint venture whiting fleet, fishing as close as 3 miles from the Klamath mouth.
- o Early and late sport fishing will not take many Klamath chinook.
- o Same arguments about meeting costs made by gillnetters could be made by charter operators.

(Crescent City Harbor District representative):

- o KMZ needs a fair share of the troll harvest.

(Yurok member):

- o Recommend the Council honor the 5-year agreement.
- o Concerned about hooking mortality during the sport ratio fishery.
- o Concerned about inadequate enforcement of sport fishing regulations in the "upper" Klamath.

(Smokehouse operator):

- o Concerned about joint venture bycatch of salmon... salmon are found with hake... that fishery seems politically protected from regulation of salmon catch. They should be kept out of the KMZ from April through September.

(Yurok member):

- o Ocean and inriver harvesters should look for common ground, such as controlling the joint venture salmon bycatch. Klamath Council should act on this.

(Troller):

- o CDFG found that gillnetting is detrimental to the resource, yet it is underway anyway, through Federal action.
- o Support Hoopa proposal to experiment with weir or trap capture of salmon, to focus on hatchery stock.
- o Klamath Council should seek Superfund cleanup of an abandoned copper mine in the Klamath basin.
- o Concerned about layers of bureaucracy such as Klamath Council... not elected and hard to remove.
- o Trollers are in a traditional fishery, just like gillnetters.

(Yurok member):

- o 5-year agreement should assure us a commercial net fishery.
- o Fair share for Indians is half the Klamath harvest.
- o Appreciate efforts of the Klamath Council.

(Yurok member):

- o Water diversions will affect all harvesters, while we fight over allocation.
- o Close KMZ and net commercial harvests and leave fish for sport anglers in 1990... gives better economic return.

(Forest Service biologist):

- o Concerned about impact of the proposed commercial net fishery on spring chinook... there is little data as to when natural stocks of spring chinook pass through the lower river. Propose that monitoring be increased.

Council responses to public comment included:

(Martin): Leave your address with Klamath Field Office staff to get information on salmon catch by the joint venture fleet.

(Bingham): Joint venture bycatch of salmon is not large, and operators have agreed to move when bycatch exceeds 0.2 salmon/ton of hake. If you have information on bycatch problems, let me know.

(Masten): Klamath Council should inform PFMC we want to be assured of adequate monitoring of bycatch. We can include this in our report to PFMC next week.

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Council recommendations on 1990 harvest plans.

(Masten): Let's start with fall chinook.

(Tuss): Move to send PFMC a recommendation of a .35/.52 harvest rate combination.

Motion was seconded.

Discussion:

(Jordan): Support, for reasons stated in my proposal presented earlier.

(Warrens): Propose to amend the motion to recommend further technical analysis of ocean harvest rates from .35 to .40...beyond the analysis by the Tech Team.

Motion to amend seconded.

(Martin): PFMC will assume our recommendation is within the range identified by Frank. The motion amounts to expanding our recommendation from the point proposed by Tuss to a range... agreement on a range is probably the best we can do, and even this range is controversial.

(Tuss): Would prefer to try to agree on a point.

Amendment fails with one no vote (Jordan), one abstention.

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Next, vote on original motion fails on Warrens' no vote.

\*\*\*\*\*

(Martin): I propose (not a motion) to ask PFMC to consider a range of options of ocean harvest rate from .35 to .40, with:

- o Inclusion of the KMZ sport fishery recommendation of the ocean harvesters.
- o Request that PFMC examine block, week, and days/week closures as troll harvest dampeners.
- o Expression of our concern for curtailment of gillnet and troll harvests, for economic impacts on ports, and for lost opportunities to harvest other stocks.

Discussion:

(Hayden): By sending forward a range, we are handing our problem to PFMC... why not try to solve it here.

(Bingham): The range Martin proposes doesn't provide for a viable troll fishery, so I can't support. Let's leave it to PFMC to finish the job we have started. (Smith): Will California troll industry support any option?

(Bingham): Our own.

(Bingham): I move we send PFMC a range of ocean harvest rates from .35 to .47, with all the caveats stated by Martin, plus the request that Klamath chinook impacts of the KMZ sport fishery be confirmed by the Salmon Tech Team.

Seconded.

Discussion:

(Hayden): See no reason to think there will be any change in projection of sport fishing impact.

(Smith): Upper limit of your range seems at variance with the part of the motion that expresses concern about low harvest in the net fishery.

(Bingham): Agree - need to send PFMC the message that present management doesn't leave room for both fisheries.

(Jordan): Concerned that the .47 ocean harvest rate would harm the database.

(Naylor): Director Bontadelli has told me that a big deviation from the 1989 target ocean harvest rate (.375) won't be considered by PFMC, so I vote no.

Motion failed on Naylor's no vote.

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(Warrens): Move to recommend a range of ocean harvest rate from .35 to .40.

Seconded.

Motion failed on no vote by Bingham.

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#### Spring chinook recommendations.

At this point, Warrens and Martin left, each commenting they favor the Yurok/BIA proposal for a spring chinook commercial harvest as defined yesterday.

(Bostwick): The issue remain of depressed natural stocks of springs, and lack of information on them.

(Bingham): Move to endorse the proposed spring chinook commercial fishery.

Seconded.

#### Discussion:

(Naylor): I missed some discussion yesterday... understand the total net harvest of springs would be about 5,000. What would be the commercial catch?  
(Masten): About 2,500.

(Hayden): Concerned there will be no window in the subsistence fishery for passage of natural stocks.

(Bingham): Share this concern, and want to insure Karuk needs are met.

(Smith): It appears there will be a cap of 5,200? (Masten): That is a target for Indian harvest. If subsistence exceeds expectations, we will adjust commercial.

(Naylor): Closure of all netting still proposed for April 20? (Masten): No.

Bingham's motion passed by consensus.

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#### PFMC amendment process.

(Masten): We need to know the PFMC process for accepting amendment options.

(Odemar): PFMC expects any amendment options to be provided at the March meeting. If none are provided, they will go to public review with the three options of Item 5 of the draft Tenth Amendment (see Attachment 8 to notes of the Council meeting of 1-3 November 1989).

(Iverson): John Coon told me they would also consider the concept of managing the Klamath fall chinook stock as a mixed hatchery/natural stock, rather than managing for protection of natural stocks (see Attachment 6 to notes of the Council meeting of 1-3 November 1989). (Baracco): This option doesn't appear to be on the PFMC agenda item for Amendment options (Thursday, March 8).

Assignments to Technical Advisory Team.

Assignments include:

- o Change in net vulnerability factor. (Masten): Please report back by next meeting.
- o Report on Klamath coho stocks and ocean harvests...tell the Council what information is available. Report date: sometime after next meeting.

(Hayden): Move to make the following long-term assignments:

- o Examine CPUE as inseason management tool.
- o Provide your best estimate of the status of all natural stocks, and your plan to fill data gaps on stock status.
- o Provide an alternative harvest plan...as identified yesterday by Martin...something that reduces limitations on harvest imposed by natural chinook stocks.
- o Provide a plan for marking all hatchery fish. (Bingham): Would like to see a proposal on this ready to present for Task Force review by 1 May.
- o Provide a technical review of the draft Task Force long-range plan.

(Masten): A related item:

- o Identify natural stocks of concern, to be identified to the Task Force for consideration in their plan.

(Baracco): I see little likelihood we can accomplish Bob Hayden's assignments any time soon. Another assignment we have pending:

- o Provide information to PFMC on framework amendment options.

(Hayden): How about completing my assignments by November 1990, except higher priority on the marking issue, to meet Task Force funding schedule. (Baracco): We provided a report on marking... not sure what more is needed.

Hayden motion seconded.

Discussion ensued on prioritizing these and other Team assignments.

(Jordan): Would like to amend Bob's motion to refer those assignments to the Team for them to report back to us on recommended priorities.

Motion for amendment seconded.

Amended motion passes.

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Original Hayden motion passes.

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Another assignment to the Tech Team was further review of effectiveness of the ratio fishery dampener proposed for the KMZ sport fishery.

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Discussion of next meeting.

(Masten): Will convene at 9 a.m., North Coast Inn, Arcata.

Return to Council recommendations on fall chinook harvest plans.

(Wilkinson): Earlier, I requested a recess to permit discussion of ocean harvest issues with constituents... am repeating that request.

(Masten): Appears there is no room for compromise... but, granted.

Following a 15 minute recess, discussion resumed:

(Hayden): Move to forward to PFMC the recommendation of the ocean harvesters for KMZ sport fishery regulations.

Seconded.

(Bingham): Move to amend Hayden's motion, adding the condition that our recommendation is contingent upon the Salmon Technical Team's estimate of Klamath chinook catch by the sport fishery being within +/- 15% of the estimate we have gotten from the Tech Team.

Discussion:

(Wilkinson): Original motion was endorsed by ocean harvester representatives -- including PCFFA representative... see no need for this further incumbrance ...recommended harvest dampeners are sufficient.

Amendment is defeated, by negative vote of Wilkinson.

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Original motion passes, Bingham abstaining.

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(Bingham): Move to recommend, for PFMC consideration, a range of ocean harvest rates from .35 to .42, with the following additional considerations:

- o All the terms and conditions identified earlier by Jim Martin.
- o Request that the Salmon Technical Team review stock abundance factors in selecting base years for modeling to project Klamath contribution rates for various ocean areas; and, if appropriate, use more suitable abundance factors (more suitable base years than 1986-89) in modeling the 1990 season.

Discussion:

(Bingham): My point is that years of low stock abundance may be more appropriate base years for modeling 1990.

(Tuss, Jordan): Not comfortable with the upper range of ocean harvest rates, but reluctantly support. The range deviates considerably from previous target ranges, which could damage our database.

Motion passes, Bostwick and Masten abstaining.

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Klamath Field Office was asked to prepare a letter conveying harvest management recommendations of the Klamath Council to the Pacific Council (Attachment 11).

Meeting adjourned about 3:30 p.m.

ATTACHMENT 1

KLAMATH FISHERY MANAGEMENT COUNCIL

Attendance Roster, March 1-2, 1990 meeting in Arcata, California.

Management Council Members

Nat Bingham	California Commercial Salmon Fishing Industry
Virginia Bostwick	Klamath In-River Sport Fishery
Gary Smith for E. C. Fullerton	National Marine Fisheries Service
Danny Jordan for C.L. Marshall	Hoopla Valley Business Council
James Martin	Oregon Department of Fish & Wildlife
Susan Masten (Chair)	Non-Hoopla Indians Residing in Klamath Area
A.E. Naylor	California Department of Fish & Game
J. Lisle Reed	U.S. Department of the Interior
Frank Warrens	Pacific Fishery Management Council
Keith Wilkinson	Oregon Commercial Salmon Fishing Industry

Others Attending

Chuck Abbott	Yurok Transition Team
Charles Baldwin	Crescent City Harbor District
Jerry Barnes	USFS
Roger Barnhart	USFW
Buddy Bear	Yurok
Skip and Judith Behary	F/V XANADV
Dave Bitts	HFMA
Lavina Bowers	Self
Denola Dowd	Klamath River Yurok
Gary Dowd	Yurok - CICRR
W. L. Duncan	Shelter Cove
William Dwol	Fisherman
Gene and Connie Elmer	Brookings Commercial Fisher Folks
Todd Flannigan	Six Rivers Trout Unlimited
John Frederick	Humbolt Harbor District
Lloyd Gillham III	BIA
Chuck and Donna Glasgow	Six Rivers Trout Unlimited
Bonnie Green	Self (Yurok)
Karen Gruetzmachen (Allen)	Indian Yurok
Rich Haberman	Indian
Mitch Handel	Commercial Fisherman
Ray Handel	Trinidad Bay Smoke House
Roger Hardisen	Self
Pat Higgins	Kier & Associates
Jim Johnson	Oregon Salmon Com.
Sam L. Jones, Jr.	Yurok Transition Team
Bryce Kenny	City of Trinidad
Bill Leavitt	MLCFA

Leslie Lollich	KRCR TV
John Loyan, Jr	Yurok
Raymond Mattz	Self
Vlayn McCovey	Yurok - CICRR
Norman McLemore	BIA
Zelma Miller	Self
Mike Morford	United Anglers of California
Virgil Moorehead	Big Lagoon Rancheria
Jackie Nix	Indian Commercial Fisherman
David O'Neill	Bosco Tribe
Karole Overburg	Bureau of Indian Affairs
Dennis Pecaut	King Salmon Charters
Jim Perkins	Fisherman
Ronnie Pierce	Yurok Transition Team
Jim Reiff	PCFFA/Fort Bragg
Kenneth Roberts	Self
Del Robinson	Bureau of Indian Affairs
Mollie Ruud	Pequa
Fred Stutsman	Leta J Charters
Lisa Sundberg Brown	Yurok Transition Team
Rich Taylor	Crescent City Harbor District
Richard Teanant	Party Boats
Diane Thresh	Native American
Jim Waldvogel	U.C. Sea Grant
Jim Walters	UAC-NCC
Clarence Whipple, Jr	Yurok Fishery
Carol Williams	Native American
Jim Witseth	Brookings Interests
Jon Wood	Self
James Wroble	Karuk Tribe
Jeff Yoon	Fisherman
Paula Yoon	Humbolt Commercial Fishermen's Wives

KLAMATH FISHERY MANAGEMENT COUNCIL  
MEETING AGENDA

March 1, 1990

9:00 a.m. Call to order. Review of agenda.

9:15 Update on pending legislation (Taylor).

9:30 Review of proposed fishery management plans for 1990.

- o Spring chinook harvests.

- oo Negotiation of total harvest rate and harvest allocation.

- oo Review of specific proposed harvest plans, including: biological overview of affected fish stocks; specifics of the harvest plan; impacts on target fish stocks; economic assessment of fisheries; and monitoring and reporting guidelines.

- oo Proposed net harvest plans (additions to information provided at last meeting, and Council review).

- ooo Proposed river sport fishery (Council comments on information provided at last meeting).

- ooo Proposed ocean fisheries targeting spring chinook.

10:30 Break.

10:45 Reconvene.

- o Fall chinook harvests.

- oo Negotiation of total harvest rate and harvest allocation.

12:00 Lunch.

1:15 Reconvene.

- oo Review of specific proposed fall chinook harvest plans.

- ooo Proposed net harvest (Council comments on information provided at last meeting).

- ooo Proposed river sport fishery.

- ooo Proposed KMZ sport fishery.

3:30 Break.

3:45 Reconvene.

- ooo Proposed ocean troll fishery.

5 p.m. Adjourn.

2 March 1990

8:00 a.m. Reconvene. Further discussion of proposed 1990 fall chinook fisheries.

9:30 Break.

9:45 Reconvene.

- o Review of proposed 1990 coho salmon fisheries.

- oo Discussion of harvest rate and harvest allocation.

- oo Review of specific proposed coho harvest plans for 1990.

- ooo River fisheries (Additions to information presented at last meeting, and Council comment).

- ooo Ocean fisheries.

10:30 Other harvest plans proposed for 1990.

11:00 Public comment on proposed harvest plans.

12:00 Lunch.

1:15 Reconvene. Council recommendations on 1990 harvest plans. Discussion of how to get these considered in the PFMC process.

2:30 New business.

3:00 Review of assignments to Technical Advisory Team.

Discussion of next meeting.

3:30 Adjourn.

DOUGLAS H. BOSCO  
1ST DISTRICT, CALIFORNIA

COMMITTEES  
PUBLIC WORKS  
AND TRANSPORTATION  
MERCHANT MARINE  
AND FISHERIES

ATTACHMENT 3

225 CANNON BUILDING  
WASHINGTON, DC 20515  
(202-225-3311)

SUITE 329  
FEDERAL BUILDING  
777 SONOMA AVENUE  
SANTA ROSA, CA 95404  
(707-576-1466)

THE EUREKA INN  
SUITE 216  
7TH AND F STREETS  
EUREKA, CA 95501  
(707-445-2055)

**Congress of the United States**  
**House of Representatives**  
**Washington, DC 20515**

TO: Klamath Fishery Management Council  
FROM: Bruce Taylor  
DATE: February 28, 1990  
  
RE: report on pending legislation

=====

I will not be able to attend the Council's meeting on Thursday. However, in a conversation with Ron Iverson earlier this week, he indicated that members of the Council would probably be most interested in the status of the Magnuson Act reauthorization and the high seas drift netting issue.

**MAGUNSON ACT**

No action has occurred since the House's passage February 6 of the reauthorization bill (HR 2061) reported by the Merchant Marine and Fisheries Committee. That bill has been referred to the Senate Commerce Committee's Subcommittee on Merchant Marine. No hearings have yet been scheduled, and it is not clear when action might occur.

**HIGH SEAS DRIFT NETTING**

The Magnuson Act reauthorization (HR 2061) includes provisions in Section 108 requiring the Secretary of State to initiate negotiations to achieve an international ban on large-scale driftnet fishing on the high seas.

The House and Senate both also passed a resolution late last year directing the State Department to enter into immediate negotiations for a total ban on high seas drift netting. To date, there has been little action on the part of the State Department, which has already negotiated separate agreements with Taiwan, Korea and Japan that prohibit drift netting in specified areas and require satellite monitoring of vessel locations.

The United Nations also approved a resolution in December dealing with the driftnet issue. This may ultimately prove to be the most promising forum for obtaining an international agreement to ban the practice.



Klamath-Trinity River Basin  
Spring Chinook Salmon  
Stock Evaluation  
And  
Run size Forecast

Klamath River Fisheries Assessment Program

U.S. Fish and Wildlife Service  
Western Region  
Fisheries Assistance Office  
Arcata, California

March 1990

KLAMATH-TRINITY RIVER BASIN SPRING  
CHINOOK SALMON STOCK EVALUATION AND RUN SIZE FORECAST

U.S. Fish and Wildlife Service  
Fisheries Assistance Office  
Arcata, California

Craig Tuss, Joseph Polos, and David Wills

March 1990

## Summary

The following list highlights results from the analysis of spring run chinook stocks in the Klamath River Basin:

1. The status of natural spring chinook stocks in the Klamath River Basin is not well documented. This report makes assumptions that must be validated concerning levels of natural escapement and spawner success to better define the natural spring chinook populations in the Klamath River Basin.
2. Spring chinook from the Klamath River Basin are impacted by (in order of estimated harvest) the ocean troll fishery, the in-river sport fishery and the Indian net fishery.
3. The true harvest impacts on the spring chinook stock is not known due to unmonitored in-river sport fisheries in the Klamath River and lower Trinity River and a dip net fishery on the mainstem Klamath River at Ishi Pishi falls. Though the magnitude of these fisheries is assumed to be small, the assumed depleted status of natural spring chinook in the Klamath River Basin warrants the effort.
4. The age composition of the catch in various fisheries indicates changing vulnerabilities and exploitation rates. This is due to size regulations, gear selectivity and maturing fish exiting the ocean fisheries during the early segment of the typical ocean fishing season.
5. From CWT recovery information it appears a number of returning adults of hatchery origin are escaping to areas outside the hatchery to spawn.
6. A run size forecast methodology is presented for use by the managing agencies to guide recommendations on future harvest of spring chinook salmon. The further development of this forecast and a harvest model is encouraged. The estimated in-river run of Klamath River spring chinook in 1990 is 16,000 adults.

## KLAMATH-TRINITY RIVER BASIN SPRING CHINOOK SALMON STOCK EVALUATION AND RUN-SIZE FORECAST

### Introduction

The creation of a commercial gillnet fishery in 1989 attempting to target on Trinity River Hatchery (TRH) spring chinook salmon stocks has caused concern about the status of the spring chinook stock in the Klamath River Basin. This has forced management agencies to address and develop a spring chinook salmon management strategy. Due to the scant information on the natural stocks of spring chinook salmon in the Klamath-Trinity Basin (Table 1); a thorough portrayal of natural stocks is not available. Any conclusions concerning natural stocks of spring chinook must use hatchery return information and harvest information collected by the various management agencies. Data collected by the California Department of Fish and Game (CDFG) at the Junction City weir and at TRH form the bulk of the information available in the basin in regards to run size status. Additional information is provided through coded-wire tag (CWT) recovery information from the ocean and in-river fisheries, and hatchery returns. The following presentation is provided to initiate this management strategy. It is hoped this information will provide a forecast of the 1990 Klamath River spring chinook run size, harvest impacts and escapements which will allow the Klamath Fisheries Management Council to make recommendation on fishery expansions, future allocations of harvest and the establishment of specific escapement goals for the important management units within the basin. It should be stressed, this analysis provides a view primarily of the hatchery component of the spring chinook run.

Information for this evaluation and forecast was compiled by the U.S. Fish and Wildlife Service (Service) in an attempt to describe the spring chinook stocks and develop a run-size forecast for Klamath Basin spring chinook salmon. The run size forecast method utilizes hatchery return and release information to develop a relationship between hatchery production and Klamath River run size. This stock evaluation also describes harvest impacts occurring in the ocean and river fisheries. Harvest impacts are described through CWT recovery information from the ocean fisheries, in-river fisheries, hatchery rack and natural spawner segments of the population. CWT recovery information is extrapolated to represent unmarked hatchery fish through use of a production multiplier.

### Run Timing

The spring chinook salmon returning to the Klamath River Basin appear to begin entering the Klamath River mouth as early as February (information collected by the Service's net harvest monitoring crews). The typical run timing (based on

Table 1. Spring chinook salmon counts from the Klamath and Smith River basins, 1964 through 1989. Provided by Mike Morford, Klamath River Technical Advisory Team.

KLAMATH RIVER SPRING CHINOOK SALMON COUNT 1964-1989																												
Stream	1964	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89		
Salmon River Mainstem	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	124 <sup>c</sup>	
N. FL Salmon	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	207 <sup>a</sup> 160 <sup>c</sup>	
S. FL Salmon	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	101 <sup>a</sup> 28 <sup>c</sup>	
E. FL of S. FL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	114 <sup>a</sup> 160 <sup>c</sup>	
Wooley Creek	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	650 <sup>a</sup> 160 <sup>c</sup>	
Elk Creek	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	81 <sup>a</sup> 11 <sup>c</sup>	
Indian Creek	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2 <sup>a</sup> NA	
Clear Creek	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1 <sup>a</sup> 2 <sup>b</sup>	
Trinity River above LaGrange	11000 <sup>a</sup>	1600	1100	650	2117	109	1847	6124	7791	3000	4500	4000	4000	4000	2878	8000	4500	Remainder in Hatchery Ad. Reports							7 <sup>a</sup>			
S. Fl. Trinity	NS	NS	NS	7 <sup>b</sup>	NS	NS	NS	7 <sup>b</sup>	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	59 <sup>a</sup>	
N. Fl. Trinity	NS	NS	NS	7 <sup>b</sup>	NS	NS	NS	7 <sup>b</sup>	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	28 <sup>a</sup>	
Canyon Creek	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
New River	NS	NS	NS	2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	11 <sup>a</sup>	
Hayfork Creek	700	Run Extrapolated																										
Smith River Spring Chinook Counts																												
S. Fl. Smith	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	38	2
M. Fl. Smith	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1
N. Fl. Smith	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

<sup>a</sup> 90-100% of holding area surveyed  
<sup>b</sup> 70-90% of holding area surveyed  
<sup>c</sup> 40-70% of holding area surveyed  
<sup>d</sup> 20-40% of holding area surveyed  
<sup>e</sup> Estimate based on Index section expansion  
 NA = Survey conducted but data cannot be located.  
 NS = No known survey  
 Prior to 1964 landslides, runs in Salmon River System were reputed to be larger.

observed harvest patterns) is believed to be late March to mid- June in the lower Klamath River (mouth to Weitchpec)(Figure 1). The run peak is usually late April through late May, again based on harvest patterns in the Yurok net fishery (Table 2).

Run timing in the Klamath River above Weitchpec is harder to define. Information from stream surveys in the Salmon River indicates that spring Chinook begin to appear in holding pools as early as June (Jack West, USFS, Yreka, personnel communication). Spring chinook salmon returning to the Trinity River Basin begin to enter the lower Trinity during May. Harvest information collected by the Hoopa Fisheries Department concerning the Hoopa net fishery shows peak run timing to be June and July (Table 2).

Information from the CDFG operated weir at Junction City during 1984 through 1989 shows peak migration of spring chinook occurs in late June. By mid to late August the spring run has passed the weir site (Figure 2). In September and October fish passing Junction City are fall chinook migrating up river to spawning areas.

Field work done by the Service in 1988 (Randy Brown, USFWS Lewiston, personal communication), using direct observation to count spring chinook in holding pools in the upper Trinity River (above Junction City) from late May through mid- September, shows a peak influx of fish in mid-June. Counts held steady and then decreased in late August as fish migrated into spawning areas. Fish seem to prefer water depths greater than 10 feet in shaded areas of low velocity. Spawning was observed to begin in mid September.

Hatchery return information indicates that spring chinook enter the hatchery between the first of September and the first week of October (TRH annual reports, 1973 through 1985). This time frame is approximate, however, due to the operation of the hatchery ladder and recent increases in run sizes of spring and fall chinook returning to TRH and the inability to differentiate the races. This issue is addressed in a later section.

#### Harvest Patterns

Harvest of spring chinook originating in the Klamath River Basin occurs in various ocean and in-river fisheries (primarily the ocean troll, in-river sport fisheries and Indian net). CWT spring chinook have been recovered from Columbia River sport and net fisheries, the ocean groundfish fishery, and fisheries in Puget Sound and British Columbia (PMFC 1990).

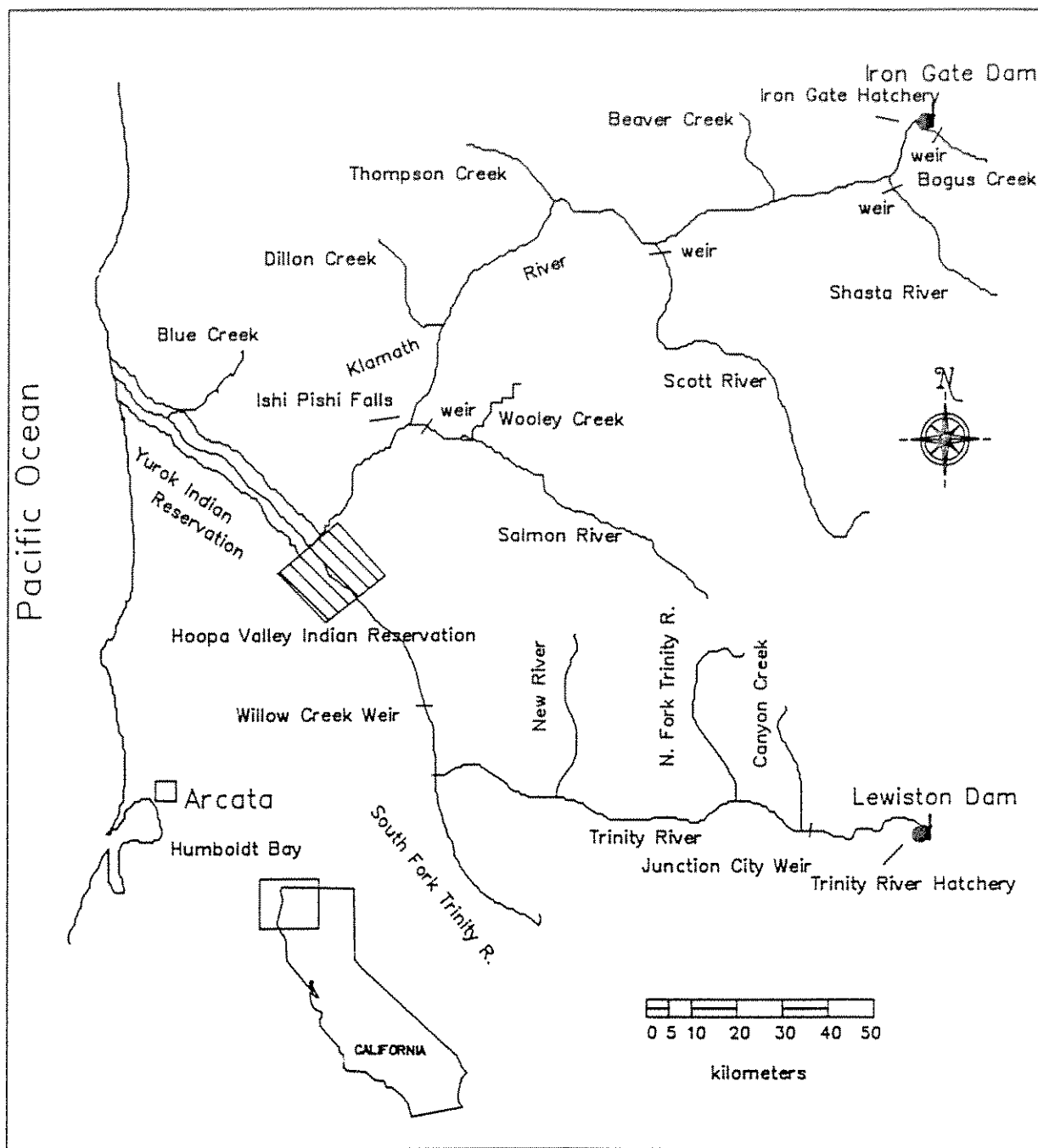


Figure 1. Map of Klamath-Trinity Basin.

Table 2. Monthly Spring Chinook Harvest Estimates.  
Yurok and Hoopa Net Fisheries, 1984-1989.

Year	Month	Yurok Fishery		Hoopa Fishery	
		Estuary	Middle Klamath	Upper Klamath	
1984	April	1	20	4	10
	May	3	90	25	10
	June	1	35	10	90
	July	50	15	5	180
	August	0	0	0	90
	September	0	0	0	0
1985	April	5	49	51	0
	May	2	96	104	240
	June	33	35	75	358
	July	569	10	90	169
	August	0	0	0	348
	September	0	0	0	0
1986	April	5	54	98	10
	May	6	37	76	103
	June	15	71	169	719
	July	15	5	155	1115
	August	0	0	0	156
	September	0	0	0	0
1987	April	10	51	18	0
	May	11	115	120	397
	June	250	10	169	1837
	July	538	0	402	1694
	August	0	0	0	346
	September	0	0	0	0
1988	April	2	20	18	0
	May	251	178	294	437
	June	225	512	227	1734
	July	1199	0	0	640
	August	0	0	0	0
	September	0	0	0	0
1989	April	123	445	191	0
	May	360	1331	1217	663
	June	307	232	479	653
	July	60	17	13	372
	August	0	0	0	310
	September	0	0	0	0

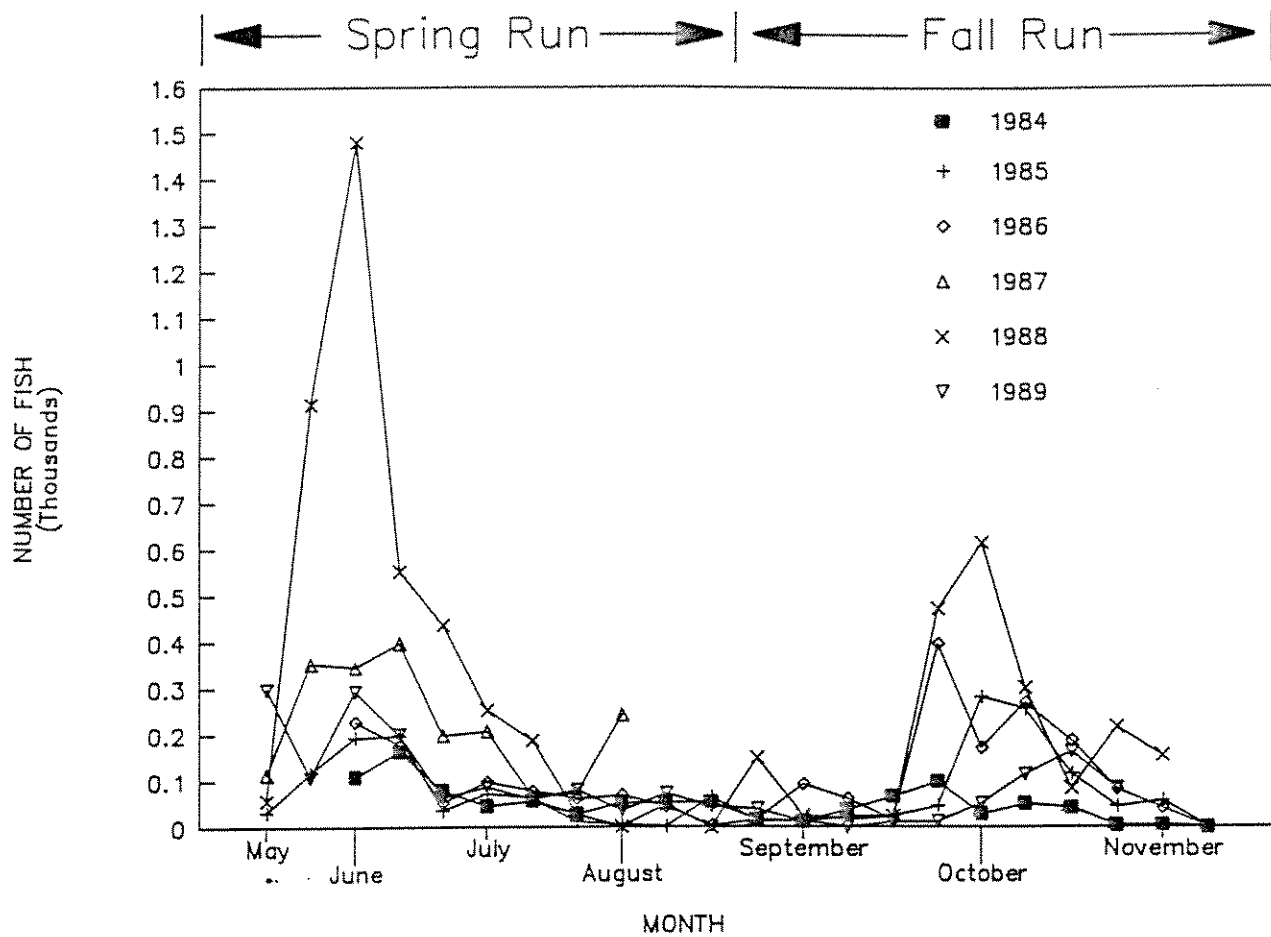


Figure 2. Adult Chinook Weir Counts at Junction City, 1984–1989.

As with the harvest impacts of fall chinook salmon, the recruitment of spring chinook to the fisheries is size related due to mesh selectivity of gill nets in the river net fishery and size regulations in the ocean fisheries. Analysis of CWT information from these fisheries describe the age specific impacts and because of the life history and size at age of spring chinook, CWT release groups of TRH spring chinook stocks have differing contribution rates to the various fisheries. The following harvest impact analysis is based on CWT recovery information from 1976 through 1984 brood years of TRH spring chinook stocks.

As pointed out by Hankin (1985), analysis of CWT recovery information concerning spring chinook must take into account the fact that spring chinook mature during the early segment of the typical commercial troll season (May through June). This causes maturing spring chinook to have different vulnerabilities to the troll fishery than non-maturing fish of the same age and similar size. Due to time constraints and data needs this analysis does not address this issue. This aspect of ocean harvest should be investigated in the near future.

#### Ocean Fisheries

The primary ocean fishery impacting Klamath River spring chinook stocks is the commercial troll fishery from Coos Bay to Fort Bragg (Table 3). Recoveries in the troll fishery far outnumber recoveries from the ocean sport fishery. Based on CWT recovery information from all ocean fisheries, TRH spring chinook stocks in ocean fisheries is equal to or greater than harvest from in-river fisheries (Table 4). The age composition of the harvest in all ocean fisheries is 2% age 2, 75% age 3 and 23% age 4. The mean fork length of CWT recoveries is 66.9 cm (unweighted mean based on PFMC recovery summaries). The small size and large component of age 3 fish is no doubt driven by the fact maturing fish are leaving the fisheries mid- season (May and June), leaving immature fish (and possibly smaller) to contribute to the remaining fishery. As stated earlier, this phenomenon must be accounted for in describing harvest impacts remaining.

#### In-River Fisheries

Based on known harvest patterns of the Indian gillnet fisheries collected by the Service and the Hoopa Fisheries Department, it has been shown that the subsistence net fisheries harvest an average of 3,350 adult spring chinook annually (1,570 for the Hoopa net fishery and 1,780 for the Yurok fishery)(Table 5). The majority of the harvest occurring in the Yurok net fishery occurs in the Klamath Glen to Blue Creek area and from Johnsons to Moore's Rock (Figure 3). Depending on river flows and spring weather patterns, harvest is concentrated in mid- to late April through late May. In recent years (1986 through 1988) a number of spring chinook (identified through CWT recovery) have been taken during July in the estuary of the Klamath River. The estuary

Table 3. Ocean Recoveries (Troll Fisheries) of Spring Chinook CWT Releases From TRH, Brood Years 1976-1994.

CWT Brood	North of Coos Bay					Coos Bay					KMZ					Ft. Bragg & Shelter Cove					S. California					
	Age					Age					Age					Age					Age					
	2	3	4	5	Total	2	3	4	5	Total	2	3	4	5	Total	2	3	4	5	Total	2	3	4	5	Total	
Code	Year																									
66106	76 Y	0	69	7	0	76	0	117	57	0	174	0	297	452	33	782	0	163	54	24	241	0	26	0	0	26
66104	77 Y	0	0	3	0	3	0	20	0	0	20	0	93	110	0	203	15	12	7	0	34	0	0	0	0	34
66111	78 F	0	2	0	0	2	0	19	0	0	19	0	540	4	0	544	0	125	5	0	130	0	14	12	0	26
66112	78 F	0	12	0	0	12	0	0	0	0	0	0	109	2	0	111	0	53	8	0	61	0	27	0	27	
66130	78 Y	0	7	7	1	15	0	36	29	0	65	0	866	119	0	985	0	102	7	0	109	0	28	0	28	
66131	78 Y+	0	0	0	0	0	0	0	6	0	6	0	169	105	3	277	0	5	6	0	11	0	6	12	0	18
66132	79 F	0	16	2	0	18	0	23	2	0	25	10	85	38	0	133	0	22	8	0	30	0	6	11	0	17
66133	79 F	0	66	18	0	84	0	246	0	5	251	0	679	162	0	841	0	237	37	0	274	0	189	16	0	205
66134	79 Y	0	69	27	0	96	0	161	17	0	178	0	363	200	0	563	0	94	27	0	121	0	52	32	0	84
66136	79 Y+	0	0	6	0	6	0	0	4	0	4	0	15	112	11	138	0	14	0	0	14	0	13	0	0	13
66139	80 Y	0	7	0	0	7	0	2	0	0	2	0	20	32	0	52	0	4	12	0	16	0	0	0	0	16
66135	81 F	0	0	0	0	0	0	0	0	0	0	0	8	7	0	15	0	4	0	4	0	12	0	0	12	
66137	81 Y	0	32	10	0	42	0	0	13	0	13	0	21	0	0	21	0	7	24	0	31	0	0	0	0	31
66138	82 Y	0	20	4	0	24	0	171	13	0	184	0	10	11	0	21	0	76	50	0	126	0	27	17	0	44
66141	82 F	0	3	0	0	3	0	44	0	0	44	0	1	0	0	1	0	7	0	7	0	0	0	0	0	7
66140	83 Y	0	129	49	0	178	0	291	145	0	436	0	214	105	1	320	0	347	120	5	472	0	313	122	0	435
66143	84 Y	2	223	63	0	288	4	552	75	0	631	0	351	145	0	496	0	413	130	0	543	0	213	118	0	331
Sum		2	655	196	1	854	4	1682	361	5	2052	18	3840	1597	48	5503	15	1685	495	29	2224	0	926	340	0	1266
All Age %		0.2	76.7	23.0	0.1	100.0	0.2	82.0	17.6	0.2	100.0	0.3	69.8	29.0	0.9	100.0	0.7	75.8	22.3	1.3	100.0	0.0	73.1	26.9	0.0	100.0
Adult Age %			76.9	23.0	0.1			82.1	17.6	0.2			70.0	29.1	0.9			76.3	22.4	1.3			73.1	26.9	0.0	

Table 3 (Continued). Ocean Recoveries (Sport Fisheries) of Spring Chinook CWT Releases From TRH, Brood Years 1976-1994.

CWT Brood	North of Coos Bay					Coos Bay					KMZ					Ft. Bragg & Shelter Cove					S. California				
	Age					Age					Age					Age					Age				
	2	3	4	5	Total	2	3	4	5	Total	2	3	4	5	Total	2	3	4	5	Total	2	3	4	5	Total
66106 76Y	0	32	3	0	35	0	0	0	0	0	0	15	0	5	20	0	10	0	0	10	0	0	0	0	0
66104 77Y	0	0	0	0	0	1	0	0	0	1	0	3	11	0	14	0	0	0	0	0	0	0	0	0	0
66111 78F	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	3	0	0	3	0	3	0	0	3
66112 78F	0	0	0	0	0	0	5	0	0	5	0	17	0	0	17	0	0	0	0	0	3	3	0	0	6
66130 78Y	0	0	0	0	0	4	0	0	0	4	0	26	0	0	26	0	0	0	0	0	0	0	0	0	0
66131 78Y+	0	0	0	0	0	0	2	0	0	2	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0
66132 79F	0	0	0	0	0	0	0	0	0	0	6	5	0	0	11	0	0	0	0	0	0	0	0	0	0
66133 79F	0	6	10	0	16	0	3	0	0	3	0	63	26	0	89	3	0	0	0	3	0	4	0	0	4
66134 79Y	0	20	5	0	25	0	3	2	0	5	0	61	48	0	109	0	0	0	0	0	0	8	0	0	8
66136 79Y+	0	0	3	0	3	0	0	2	0	2	0	7	11	0	18	0	0	0	0	0	0	0	0	0	0
66139 80Y	0	4	3	0	7	0	0	0	0	0	10	25	0	0	35	0	0	0	0	0	0	0	0	0	0
66135 81F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66137 81Y	0	3	0	0	3	0	2	0	0	2	11	11	23	1	46	0	0	0	0	0	0	0	0	0	0
66138 82Y	0	0	0	0	0	0	0	0	0	0	0	86	7	0	93	0	0	0	0	0	0	7	0	0	7
66141 82F	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
66140 83Y	2	8	3	0	13	2	5	2	0	9	8	42	48	0	98	0	5	0	0	5	0	28	5	0	33
66143 84Y	0	76	1	0	77	0	16	3	2	21	0	176	29	0	205	0	0	8	0	8	0	4	0	0	4
Sum	2	151	28	0	181	7	36	9	2	54	38	537	207	6	788	3	18	8	0	29	6	54	5	0	65
All Age %	1.1	83.4	15.5	0.0	100.0	13.0	66.7	16.7	3.7	100.0	4.8	68.1	26.3	0.8	100.0	10.3	62.1	27.6	0.0	100.0	9.2	83.1	7.7	0.0	100.0
Adult Age %		84.4	15.6	0.0			76.6	19.1	4.3			71.6	27.6	0.8			69.2	30.8	0.0			91.5	8.5	0.0	

Table 4. Expanded Recoveries, Multiplied by production Factor, by Age, by Code, by Recovery Method.

CWT Code	Ocean Fisheries					Yurok net					Hoopa net					In-river Sport				
	Age					Age					Age					Age				
	2	3	4	5	Total	2	3	4	5	Total	2	3	4	5	Total	2	3	4	5	Total
66106	0	768	604	64	1436		169	45	0	214	0	160	11	0	171	1	68	20	2	91
66104	16	136	136	0	289		402	64	0	466	0	29	0	0	29	0	43	66	0	108
66111	6	729	25	0	760	0	1888	0	0	1888	0	82	0	0	82	6	128	2		136
66112	17	1812	58	0	1888	0	1535	671	19	846	0	82	47	6	135	5	938	17		1037
66130	5	1327	202	1	1535	0	30	416	0	445	0	0	58	0	58	0	281	58		345
66131	1	239	156	4	400	0	0	0	0	0	0	30	0	0	30	1	45	53		98
66132	28	171	64	0	263	0	0	16	0	16	0	144	2	0	146	2	25		0	26
66133	10	1793	326	0	2129	8	48	87	0	144	0	40	11	0	51	3	130		0	133
66134	14	847	358	0	1218	5	44	30	0	79	0	8	0	0	8	1	56		0	59
66136	1	33	172	11	218	0	0	10	0	10	0	0	0	0	0	0	9	18	0	10
66139	10	63	45	0	118	0	10	40	29	79	0	0	0	0	9	39	96	103	0	57
66135	55	164	27	0	246	0	0	0	0	0	0	0	82	0	82		167	200	4	198
66137	40	251	258	4	552	0	33	265	0	298	0	0	254	22	276		17	38	3	370
66138	0	1368	348	0	1716	0	262	172	0	434	0	262	251	0	513	7	44	65	0	65
66141	0	59	1	0	60	0	6	12	0	19	0	0	0	0	0	6	1713	1944	10	115
66140	58	6703	2882	29	8671	19	462	1025	5	1511	0	986	1280	0	2266	144	4715	732	0	3811
66143	343	11575	3284	11	15214	0	1087	1316	0	2403	51	1230	841	0	1922	898	4715	732	0	6345
sum	604	28037	8948	124	37713	33	2709	4169	53	6964	51	2971	2639	37	5698	1196	8475	3317	19	13006
all age %	1.6	74.3	23.7	0.3	100.0	0.5	38.9	59.9	0.8	100.0	0.9	52.1	46.3	0.7	100.0	9.2	65.2	25.5	0.1	100.0
adult age %		75.6	24.1	0.3			39.1	60.2	0.8			52.6	46.7	0.7			71.8	28.1	0.2	

Table 4. (Continued). Expanded Recoveries, Multiplied by Production Factor, by Age, by Code, by Recovery Method.

CWT Code	Hatchery Escapement					"Natural" Escapement					Other recoveries					Total Recoveries
	Age					Age					Age					
	2	3	4	5	Total	2	3	4	5	Total	2	3	4	5	Total	
66106	20	18	56	3	97	2	335	244	2	583	0	1	2	0	3	2211
66104	9	122	101	1	233	1	533	76	1	611	0	0	0	0	0	1242
66111	54	67	3	0	124	16	148	8		172	0	0	0	0	0	1578
66112	455	1101	64	0	1620	962	2150	122		3234	0	0	0	0	0	8275
66130	69	429	275	0	774	14	325	188		527	0	0	2	0	2	4164
66131	2	69	253	4	328	0	52	174		226	0	0	2	0	2	1558
66132	19	117	38	1	176	4	80		1	85	0	5	0	0	5	601
66133	48	135	49	0	232	12	912		0	924	0	4	0	0	4	3711
66134	53	266	191	1	511	13	182		1	196	0	10	3	0	13	2128
66136	15	45	90	0	149	3	30		0	33	0	0	0	0	0	429
66139	55	181	50	5	290	120		51	0	171	0	3	0	0	3	727
66135	103	253	554	0	910		260	465	0	725	0	7	21	0	27	2189
66137	47	439	1108	4	1598		458	930	11	1398	0	0	25	0	25	4518
66138	72	813	362	0	1247	10	83	207	14	313	0	3	0	0	3	4292
66141	5	30	20	1	56	15	206	345	0	565	0	0	0	0	0	816
66140	486	2858	1814	14	5173	515	9036	6804	34	16388	10	29	10	0	48	38868
66143	624	4400	1327	23	6374	3725	16495	3135	0	23356	97	435	200	0	732	56347
sum	2136	11343	6356	57	19893	5411	31287	12750	64	49510	107	497	266	0	870	
all age %	10.7	57.0	32.0	0.3	100.0	10.9	63.2	25.8	0.1	100.0	12.3	57.1	30.6	0.0	100.0	
adult age %		63.9	35.8	0.3			70.9	28.9	0.1			65.2	34.8	0.0		

Table 5. Yurok and Hoopa Spring Chinook Net Harvest 1980-1989.

Area	Yurok			Harvest *		Hoopa		Harvest **	
				Rate	Total	Total	Rate		
	Estuary	Klamath	Total						
	Comm	Subs							
1981		1320	397	1717	0.16	1090	0.13		
1982		172	2268	2440	0.32	715	0.14		
1983		60	450	510	***	75	***		
1984		52	195	247	0.08	380	0.13		
1985		580	494	1074	0.10	1000	0.10		
1986		41	651	692	0.03	2022	0.08		
1987		786	860	1646	0.03	4146	0.09		
1988		1677	1249	2926	0.04	2727	0.04		
1989	206	644	3925	4775	0.16	1978	0.08		
1980-1989		592	1165	1781	0.11	1570	0.10		
1984-1989		630	1229	1893	0.07	2042	0.09		

\* Harvest rate based on estimated run size at Klamath River mouth.

\*\* Harvest rate based on estimated run size at Trinity River mouth.

\*\*\* No spring chinook estimate made by CDFG.

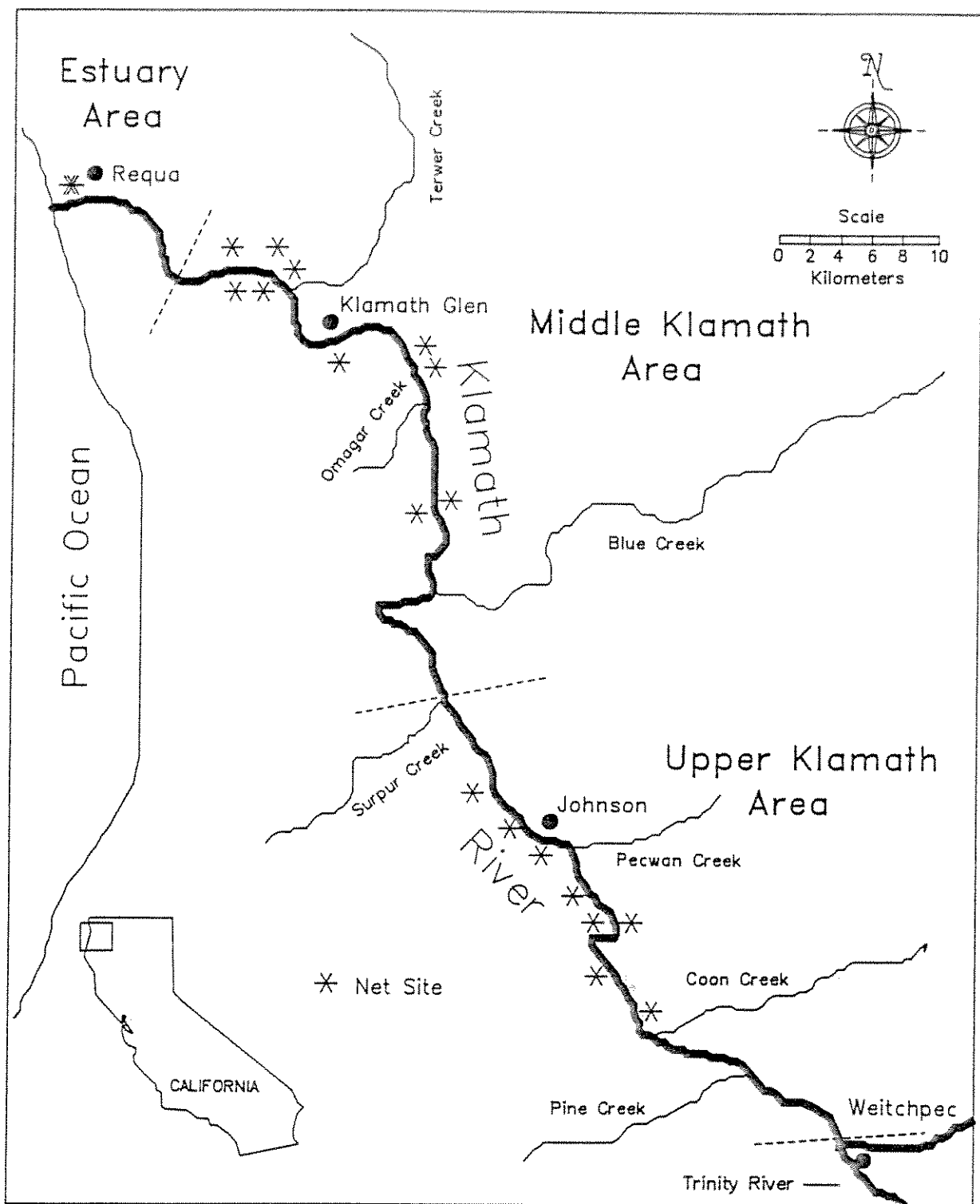


Figure 3. Map of Lower Klamath River Denoting Net Fishing Sites During Spring Chinook Season.

receives little net fishing pressure early in the spring due to high river flows and debris problems. By mid-June the effort in the lower Klamath River net fishery has been greatly reduced due to low catch rates. The mean fork length of the spring chinook taken in the Yurok net fishery has been 75.8 cm (s=5.46, n=32), 74.0 cm (s=7.43, n=49), 72.0 cm (s=7.07, n=139) and 68.9 cm (s=4.87, n=103), in 1985, 1986, 1987 and 1988, respectively (U.S. Fish and Wildlife Service 1989). A commercial fishery targeting on spring chinook in the estuary of the Klamath River during June and July of 1989 harvested 206 chinook. The mean fork length of spring chinook sampled during this fishery was 72.5 cm (s=5.42, n=171). The age composition of spring chinook (based on CWT recoveries) in the Yurok subsistence net fishery has averaged 0% age 2, 39% age 3, 60% age 4 and 1% age 5 over the 1978 through 1984 brood years (Table 4).

The majority of the net harvest in the Hoopa net fishery occurs during June and July. The mean fork length of the spring chinook taken in the Hoopa net fishery has been 73.3 cm (n=204), 69.1 cm (n=460), 70.9 cm (n=592), and 69.9 cm (n=363) in 1985, 1986, 1987 and 1988 respectively (Hoopa Tribal Fishery Department 1981). The age composition of the spring chinook (based on CWT recoveries) in the Hoopa net fishery has averaged 1% age 2, 52% age 3, 46% age 4 and 1% age 5 (Table 4).

The sport fishery in the lower Klamath and lower Trinity Rivers occurs at the same time as the net fisheries in the respective areas. There is no harvest information available to describe impacts from these fisheries. The sport fishery above Junction City occurs during July through September. The age composition of the spring chinook (based on CWT recoveries) in the sport fishery above Junction City has averaged 9% age 2, 65% age 3 and 26% age 4 (Table 4). Based on run size estimates from the Junction City weir, the sport fishery annually harvests 13% of the estimated adult run size above Junction City (Table 6).

Concerns as to the impacts on natural stocks of spring chinook by subsistence fisheries are real and should be addressed to provide increased protection to these stocks. This concern does not lie with the Indian gillnet fishery only, however; all fisheries discussed here share in impacts on natural stocks. The lack of harvest information from the Klamath and lower Trinity River must be addressed in order to provide necessary information and identify harvest impacts on natural stocks. A dip net fishery at Ishi Pishi falls (Klamath River Rk 97) must be monitored and harvest estimates generated, preferably by the Karuk Tribe. Due to the location of this fishery and the sensitivity of the natural spring chinook stocks in the Salmon River any harvest, no matter what magnitude, must be described.

Table 6. Trinity Spring Chinook Salmon Run Size Above Junction City  
Angler Harvest and Spawning Escapements, 1977-1989

Year	Run Size Estimate Above Junction City																										
	Jacks			Adults		Total		Jack Rate		Adult Rate		Angler Harvest		Harvest Rate		Spawner Escnt		% of Run size		Hatchery returns		% of run size		H/N spn ratio			
1977	no estimate																										
1978	190	18816	19006	0.01	0.99	752	0.04	14384	76.4	1124	19.6	0.26															
1979	113	7964	8077	0.01	0.99	1298	0.16	5008	62.9	3680	20.8	0.33															
1980	1949	2301	4250	0.46	0.54	140	0.06	1614	70.1	547	23.8	0.34															
1981	347	7913	8260	0.04	0.96	2146	0.27	3362	42.5	2405	30.4	0.72															
1982	656	5731	6387	0.10	0.90	637	0.11	3868	67.5	1226	21.4	0.32															
1983	no estimate																										
1984	255	2465	2720	0.09	0.91	375	0.15	1354	54.9	736	29.9	0.54															
1985	1434	8278	9712	0.15	0.85	736	0.09	4897	59.2	2645	32.0	0.54															
1986	7081	23403	30484	0.23	0.77	2949	0.13	13371	57.1	7083	30.3	0.53															
1987	4858	46016	50874	0.10	0.90	8467	0.18	29083	63.2	8466	18.4	0.29															
1988	720	61972	62692	0.01	0.99	8738	0.14	39329	63.5	13905	22.4	0.35															
1989	2021	27239	29260	0.07	0.93	2152	0.08	19581	71.9	5506	20.2	0.28															
77-89	1784	19282	21066	0.12	0.88	2581	0.13	12350	62.7	4066	24.46	0.41															
84-89	2728	28229	30957	0.11	0.89	3903	0.14	17936	61.6	6390	25.52	0.42															

## Spawning Escapement

### Natural Stocks

Spawning escapement information on spring chinook is scant except for surveys done in 1987 through 1989 in the mainstem Trinity River above the North Fork Trinity, counts at TRH and the estimated escapements above Junction City (Table 6 and 7). The major spawning areas for natural spring chinook in the Trinity River Basin include the mainstem Trinity River, the South Fork Trinity River, Canyon Creek, New River and the North Fork Trinity River. The major spawning areas for spring chinook in the upper Klamath River Basin appear to be limited to Salmon River and its tributaries (Woolley Creek, North Fork and South Fork)(Table 1)(Figure 1). In the Trinity River above Junction City, 26% of the run has returned to the hatchery while 62% of the run has returned to natural spawning areas since 1984. This is not presented here to describe the hatchery/natural composition of the run, but to describe the apportionment of the returns by the estimation methods.

The only spawning escapement goal established for natural areas in the Klamath-Trinity River Basin is 6,000 adult spawners for the Trinity River. This goal is stated in the Trinity River Restoration Plan. Goals for other areas have not been established and current information is lacking to allow proper determination in many instances.

Prespawning mortality of adult spring chinook is a concern. At present, mortality rates have been as high as 65% (Bill Heuback, CDFG, Arcata, personnel communication). While mortality seems to be stress related rather than disease related, a better understanding of this phenomenon is needed. For this analysis, a prespawning mortality rate of 50% is used for age 3, 4 and 5 fish.

### Trinity River Hatchery Stocks

The escapement goal for the hatchery is 3,000 adult fish annually (IGH does not produce spring chinook salmon) with an assumed male to female ratio of 1:1.1. The assumed fecundity is 3,000 eggs per female. From information obtained in hatchery records since 1977, the average adult escapement has been 4,020, the male to female ratio has been 1.4:1 and the fecundity has been 2910 eggs per female (Table 7). It should be pointed out due to different methodologies used to estimate the spring/fall chinook cut off, the hatchery returns presented in Table 6 and Table 7 are different. Hatchery records had to be used to define the fecundity and the male/female ratio.

The age composition of the hatchery returns (based on CWT recoveries from all releases) has been 11% age 2, 57% age 3, 32% age 4 and 0% age 5 (Table 4). Size information from a 1983 brood year yearling (October) release and a 1982 brood

Table 7. Trinity River Hatchery Return Data, From Hatchery Reports, 1977-1989.

Year	Jacks	Males	Female	Adults	Total	%Jacks	%Males	%Females	%adults	Male/Fem Ratio	Females Spawmed	Eggs Taken	Fecund	Egg Size #/oz
1977	385	598	526	1124	1509	25.5	39.6	34.9	74.5	1.14	228	568000	2491	81
1978	143	1858	1898	3756	3899	3.7	47.7	48.7	96.3	0.98	1171	3175000	2711	83
1979	146	597	801	1398	1544	9.5	38.7	51.9	90.5	0.75	484	1344000	2777	83
1980	776	296	216	512	1288	60.2	23.0	16.8	39.8	1.37	137	377000	2752	90
1981	224	1155	1296	2451	2675	8.4	43.2	48.4	91.6	0.89	839	2680000	3194	102
1982	225	639	685	1324	1549	14.5	41.3	44.2	85.5	0.93	545	1571465	2883	89
1983	279	394	462	856	1135	24.6	34.7	40.7	75.4	0.85	313	701596	2242	95
1984	168	738	367	1105	1273	13.2	58.0	28.8	86.8	2.01	305	720709	2363	108
1985	2206	2303	1820	4123	6329	34.9	36.4	28.8	65.1	1.27	1394	4383490	3145	83
1986	963	2764	1942	4706	5669	17.0	48.8	34.3	83.0	1.42	1478	4134844	2798	106
1987	2022	5177	3362	8539	10561	19.1	49.0	31.8	80.9	1.54	1159	3449310	2976	88
1988	775	9232	5873	15105	15880	4.9	58.1	37.0	95.1	1.57	1228	3772735	3072	90
1989	166	3769	3477	7246	7412	2.2	50.8	46.9	97.8	1.08	875	2707305	3094	82
77-89	652	2271	1748	4019	4671	14.0	48.6	37.4	86.0	1.30	781	2275804	2808	91
84-89	1050	3997	2807	6804	7854	13.4	50.9	35.7	86.6	1.42	1073	3194732	2908	93

year fingerling (June) release of spring chinook recovered at the hatchery is shown in Table 8 to provide the reader with an idea how size at return is related to release strategy.

Table 8. Size at age of TRH spring chinook returns from a 1982 brood fingerling release and a 1983 brood yearling release. Information presented by sex (M or F), size is forklength in centimeters.

				Size at Age							
Code	By	Release Size	Site	2		3		4		5	
				M	F	M	F	M	F	M	F
<u>Fingerling</u>											
6-61-41	82	81/lb.	TRH	39	---	66	63	72	72	---	74
<u>Yearling</u>											
6-61-40	83	11/lb.	TRH	45	---	62	62	75	73	---	---

Information obtained from Bill Heuback, CDFG, Arcata.

Table 9 presents the hatchery release data, converted to pounds, from the 1978 through the 1984 brood year. Table 10 presents the CWT returns recovered at the hatchery racks. From this information an age composition of returns from on site releases has been described as 60% age 3 and 40% age 4 returning adult fish. This information is presented to provide additional details on hatchery production and returns. Table 11 presents the CWT releases for the brood years 1976 through 1984 with their associated unmarked releases and production multiplier values.

#### Contribution, Exploitation, Maturation and Survival Rates

Contributions to the various fisheries have been estimated for the CWT represented release groups from TRH and are presented in Tables 3 and 4. While the estimated harvest presented here is not able to describe overall harvest rates on the spring chinook stocks, it is a guide to show contribution and patterns of one fishery relative to another fishery.

Table 9. Pounds of Spring Chinook Released on Site, by Size

Brood year	Yearlings	Fingerlings	Total
76	8286	20627	28913
77	11111	0	11111
78	46983	14440	61423
79	6855	2900	9755
80	3478	0	3478
81	28140	18766	46906
82	25540	1875	27415
83	43585	0	43585
84	44583	0	44583
85	86206	44405	130611
86	15777	27536	43313
87	0	32979	32979
76-87	26712	10879	37591
80-85	30914	15695	46609

Table 10. Age At Recovery of Returning CWT Releases at Hatchery Rack.

CWT code	Brood Year	Age At Return				Total Recoveries
		2	3	4	5	
66106	Y76	19	17	53	3	92
66104	Y77	9	117	97	1	224
66111	F78	52	65	3	0	120
66112	F78	78	189	11	0	278
66130	Y78	56	346	222	0	624
66131	Y+78	2	58	214	3	277
66132	F79	18	110	36	1	165
66133	F79	40	113	41	0	194
66134	Y79	53	265	191	1	510
66136	Y+79	14	43	87	0	144
66139	Y80	54	178	49	5	286
66135	F81	15	37	81	0	133
66137	Y81	13	121	305	1	440
66138	Y82	21	236	105	0	362
66141	F82	5	29	19	1	54
66140	Y83	101	594	377	3	1075
66143	Y84	109	769	232	4	1114
<hr/>						
On site	sum	567	3109	2079	23	5778
	% all age	0.10	0.54	0.36	0.00	1.00
	% adults		0.60	0.40	0.00	
<hr/>						
Fingerling	sum	208	543	191	2	944
	% all age	0.22	0.58	0.20	0.00	1.00
	% adults		0.74	0.26	0.00	
<hr/>						
Yearling	sum	435	2643	1631	18	4727
	% all age	0.09	0.56	0.35	0.00	1.00
	% adults		0.62	0.38	0.00	
<hr/>						
Yrling+	sum	16	101	301	3	421
	% all age	0.04	0.24	0.71	0.01	1.00
	% adults		0.25	0.74	0.01	
<hr/>						
All Rel	sum	659	3287	2123	23	6092
	% all age	0.11	0.54	0.35	0.00	1.00
	% adults		0.61	0.39	0.00	

Table 11. Spring Chinook CWT release information,  
in numbers of fish released.

Code	Year	Brood Release Type	#Marked Release	#Unmark Release	Total# Release	Production Multiplier
66106	76	Y	94230	4770	99000	1.05
66104	77	Y	56840	2368	59208	1.04
66111	78	F	192800	7200	200000	1.04
66112	78	F	170800	824545	995345	5.83
66130	78	Y	191916	46058	237974	1.24
66131	78	Y+	134948	24864	159812	1.18
66132	79	F	187494	12606	200100	1.07
66133	79	F	181134	35478	216612	1.20
66134	79	Y	86594	174	86768	1.00
66136	79	Y+	35666	1294	36960	1.04
66139	80	Y	34601	527	35128	1.02
66135	81	F	182635	1066840	1249475	6.84
66137	81	Y	98637	259631	358268	3.63
66138	82	Y	96461	235831	332292	3.44
66141	82	Y	146194	5681	151875	1.04
66140	83	Y	90293	344164	434457	4.81
66143	84	Y	98568	465402	563970	5.72

A cohort analysis for the 1976 through 1984 brood years is presented in Table 12. From this analysis exploitation and maturation probabilities can be estimated. These are presented in Table 13. The ocean exploitation rate used in the table is the ocean harvest divided by the starting population. The In-river exploitation rate is the in-river harvest divided by the In-river harvest plus the in-river escapement.

Exploitation rates in the ocean of the various release types (fingerling, yearling and yearling plus (March release)) show fingerling to contribute most as age 3 while yearlings have a steady contribution from age 3 through age 5. Contribution of yearling plus releases to the ocean fisheries increased with age (Figure 4). Yearling plus releases were discontinued after the 1979 brood.

Exploitation rates in the in-river fisheries of the various release types show fingerlings contribute most as age 3 fish while yearling releases show increasing contribution through age 5. Yearling plus releases contribute most as age 4 fish and like fingerlings contribute little as age 5 fish (Figure 5).

Maturity probabilities for the various releases (Figure 6) show a wide range as age 3 fish but are very similar for age 4 fish. The vast majority of this wide range was caused by the yearling plus releases which have been discontinued.

Age 2 survival estimates (Table 13) seem to show a dramatic increase in the 1983 and 1984 brood years. The exact reason is unclear, but river conditions, ocean conditions and hatchery practices may all play a part in this increase. As with the fall chinook stocks, these increased survival rates were reflected in increased returns to the basin.

Age and release type specific vulnerability rates were calculated for the ocean fisheries. Vulnerability rates for in-river fisheries were not addressed due to undefinable partitioning of the in-river harvest. This will be done as a future refinement.

#### Run Size Forecast

The method used here to forecast the TRH 1990 spring chinook adult returns is similar to a method used by the Washington Department of Fisheries (WDF 1989) in forecasting the Skagit River Hatchery spring chinook returns. For the Skagit River Hatchery return forecast a return per brood pound of release value was calculated over a ten year average. This value was applied to the respective brood release returning in the current year to forecast the hatchery return as shown below:



Table 13. Age-Specific Ocean Exploitation rates (oc exp), River Exploitation rates (ir exp),  
Maturation Probabilities (mat), and Age 2 Survival Rates.

CWT Code	Br Yr	age 5 oc exp	age 5 ir exp	age 5 mat	age 4 oc exp	age 4 ir exp	age 4 mat	age 3 oc exp	age 3 ir exp	age 3 mat	age 2 oc exp	age 2 ir exp	age 2 mat	age 2 survival
66106	Y76	0.84	0.17	1.00	0.46	0.03	0.87	0.28	0.09	0.32	0.00	0.05	0.00	0.0686
66104	Y77	0.00	0.00	1.00	0.24	0.16	0.99	0.08	0.03	0.66	0.02	0.00	0.00	0.0770
66111	F78			1.00	0.24	0.72	1.00	0.45	0.51	0.87	0.01	0.08	0.02	0.0190
66112	F78			1.00	0.11	0.18	1.00	0.19	0.17	0.92	0.00	0.05	0.07	0.0228
66130	Y78	0.05	1.00	1.00	0.10	0.46	0.98	0.27	0.26	0.46	0.00	0.06	0.01	0.0519
66131	Y+78	0.33	0.00	1.00	0.10	0.38	0.99	0.13	0.24	0.14	0.00	0.00	0.00	0.0325
Brood		0.13	0.78	1.00	0.11	0.40	0.99	0.23	0.22	0.68	0.00	0.06	0.04	0.0276
66132	F79	0.00	0.00	1.00	0.39	0.17	0.95	0.23	0.12	0.69	0.06	0.04	0.01	0.0091
66133	F79			1.00	0.63	0.48	1.00	0.40	0.13	0.79	0.00	0.15	0.01	0.0475
66134	Y79	0.00	0.00	1.00	0.45	0.10	0.99	0.34	0.14	0.51	0.01	0.11	0.01	0.0728
66136	Y+79	1.00	0.00	1.00	0.46	0.05	0.93	0.07	0.11	0.26	0.01	0.06	0.01	0.0378
Brood		0.58	0.00	1.00	0.50	0.18	0.97	0.34	0.13	0.64	0.01	0.11	0.01	0.0367
66139	Y80	0.00	0.79	1.00	0.12	0.22	0.81	0.09	0.03	0.45	0.03	0.18	0.11	0.0594
66135	F81			1.00	0.01	0.08	1.00	0.05	0.00	0.27	0.03	0.00	0.01	0.0067
66137	Y81	0.06	0.47	1.00	0.05	0.15	0.99	0.04	0.01	0.22	0.01	0.00	0.00	0.0484
Brood		0.06	0.47	1.00	0.04	0.13	0.99	0.04	0.01	0.24	0.02	0.00	0.01	0.0160
66138	Y82	0.00	0.11	1.00	0.18	0.29	0.98	0.26	0.23	0.48	0.00	0.08	0.01	0.0396
66141	F82	0.00	0.00	1.00	0.00	0.10	1.00	0.04	0.10	0.34	0.00	0.24	0.01	0.0213
Brood		0.00	0.10	1.00	0.12	0.22	0.98	0.22	0.21	0.45	0.00	0.11	0.01	0.0338
66140	Y83	0.21	0.13	1.00	0.12	0.20	0.99	0.13	0.12	0.47	0.00	0.14	0.01	0.3074
66143	Y84	0.20	0.00	1.00	0.22	0.23	0.99	0.18	0.14	0.72	0.01	0.18	0.03	0.3041
all years		0.28	0.26	1.00	0.16	0.19	0.99	0.16	0.13	0.57	0.01	0.17	0.02	
Finger		0.00	0.00	1.00	0.12	0.13	1.00	0.22	0.17	0.71	0.01	0.06	0.04	
Year		0.25	0.32	1.00	0.16	0.21	0.99	0.16	0.13	0.57	0.01	0.17	0.02	
year+		0.68	0.00	1.00	0.17	0.34	0.98	0.12	0.19	0.17	0.00	0.05	0.00	

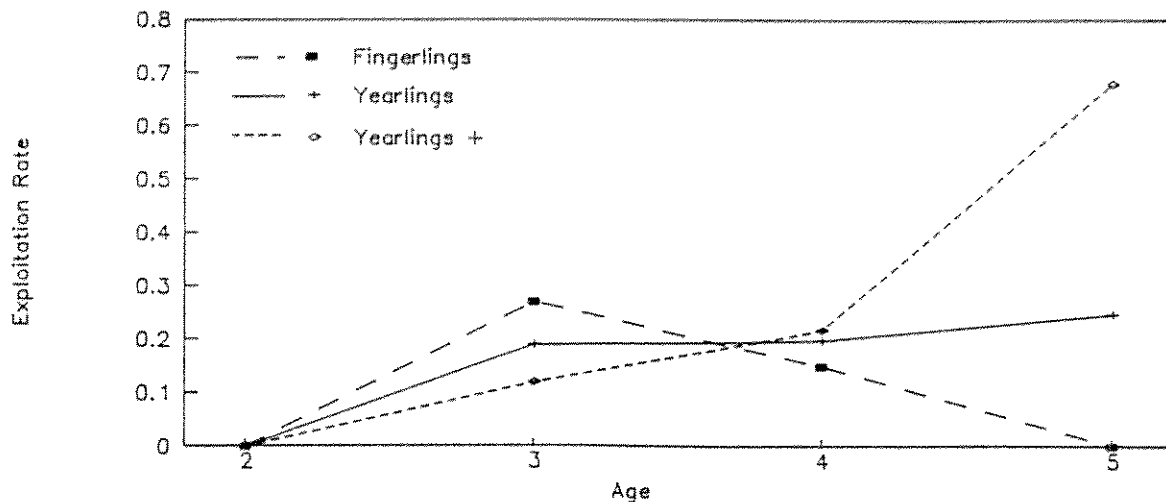


Figure 4. Ocean Exploitation Rates Of TRH CWT Releases, By Release Type and Age.

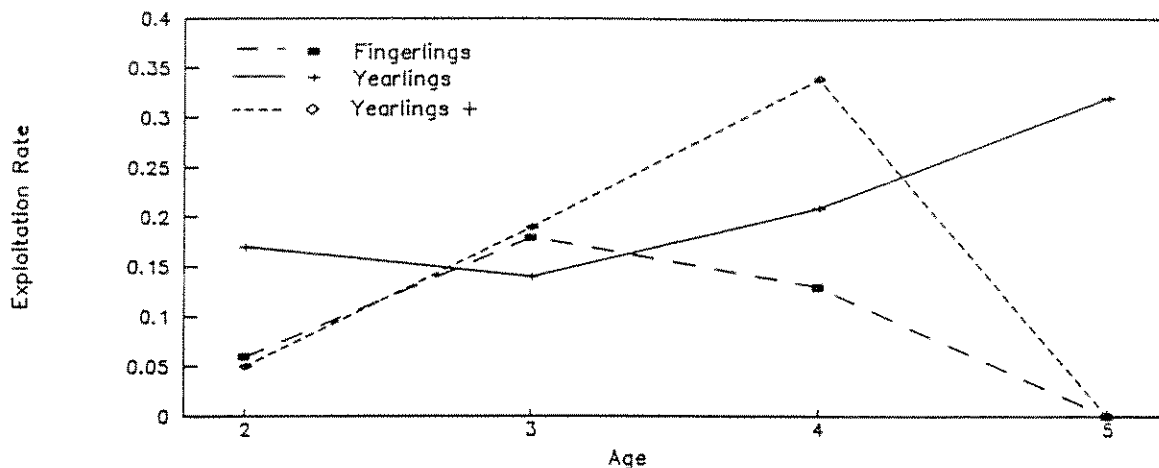


Figure 5. Inriver Exploitation Rates of TRH CWT releases, By Release Type and Age.

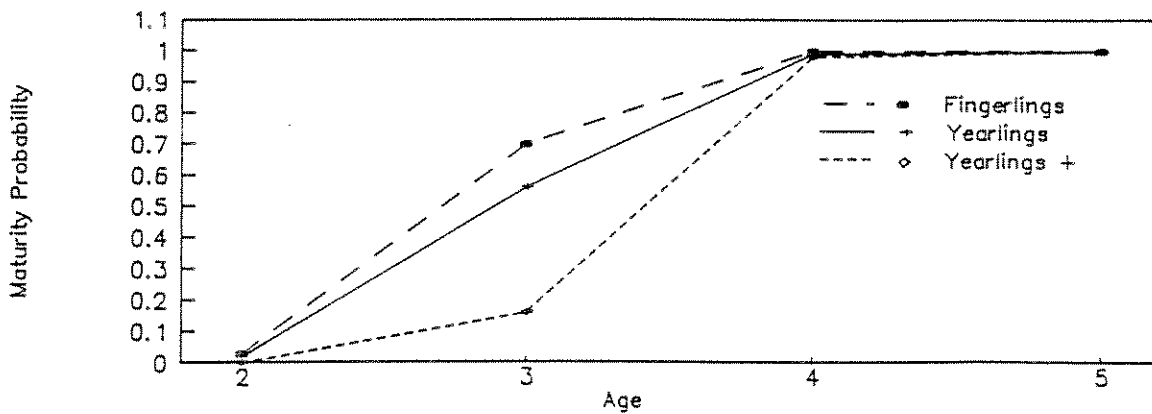


Figure 6. Maturity Probabilities for TRH CWT Releases, By Release Type and Age.

1990 adult hatchery return = (1986 brood pounds released on-site) x (1980 through 1985 hatchery return/brood pound released on-site rate).

This methodology has been modified to reflect multiple age of returns by release type (fingerling and yearling) and the proportion of spring chinook escapement of hatchery origin that return to the hatchery.

The estimation of adult (age 3 through 5) run size returning to TRH is based on CWT data from the 1980 through 1986 brood years. Values of return per pound released were determined by release type (fingerling or yearling) and age (2 through 5) by summarizing CWT recoveries from TRH and spawning ground surveys and expanding them by the appropriate production multiplier (Table 14). The proportion of hatchery spring chinook returning to the hatchery was calculated by dividing the total recoveries (returns) to the hatchery by the total return (hatchery and natural) for each CWT code by age (Table 14a). Average values for returns per pound released (by release type and age) and proportion of returning adults to the TRH (by release type and age) were used to estimate the adult (age 3 through 5) return to TRH by multiplying the pounds of fingerling and yearlings released in 1985 through 1987 (Table 9) by the appropriate average return/lb. and the proportion returning to the hatchery.

Adult Hatchery Return=

$$\sum_{i=f}^{i=y} \sum_{j=3}^{j=5} \left( \text{pounds released for a brood year} \right)_{ij} \times \left( \text{average return per pound released} \right)_{ij} \times \left( \text{average proportion returning to TRH} \right)_{ij}$$

i= release type (f=fingerling, y=yearling)

j= age at return

To calculate the adult run size above Junction City, the 1984 through 1989 hatchery component of the Junction City run size (Table 6) was applied to the TRH return forecast.

adult run above Junction City = (1990 TRH return forecast) (1984 through 1989 hatchery adult run-size component).

To calculate the Klamath River adult run size forecast the assumption that 90% of the basin run originates above Junction City is applied to the Junction City run size forecast.

Klamath River adult run-size = (Junction City adult run-size forecast)/0.90.

Table 14. Return per Pound Released of Spring Chinook Expanded by Production Multiplier by Release Type, Age and Brood Year.

Brood Year	Fingerling				Yearling			
	Age				Age			
	2	3	4	5	2	3	4	5
1976	N/A	N/A	N/A	N/A	0.0027	0.0426	0.0362	0.0006
1977	N/A	N/A	N/A	N/A	0.0009	0.0590	0.0159	0.0002
1978	0.1030	0.2400	0.0136		0.0018	0.0186	0.0189	0.0001
1979	0.0286	0.4290	0.0300	0.0007	0.0123	0.0763	0.0410	0.0003
1980	N/A	N/A	N/A	N/A	0.0503	0.0520	0.0290	0.0014
1981	0.0055	0.0273	0.0543		0.0017	0.0319	0.0724	0.0005
1982	0.0107	0.1259	0.1947	0.0005	0.0032	0.0351	0.0223	0.0005
1983	N/A	N/A	N/A	N/A	0.0230	0.2729	0.1977	0.0011
1984	N/A	N/A	N/A	N/A	0.0975	0.4687	0.1001	0.0005
Average	0.0369	0.2055	0.0732	0.0006	0.0215	0.1174	0.0593	0.0006

\* N/A – No fingerling CWT codes released

Table 14a. Proportions of Spring Chinook Expanded by Production Multiplier Recovered at TRH by Release Type, Age and Brood Year.

Brood Year	Fingerling				Yearling			
	Age				Age			
	2	3	4	5	2	3	4	5
1976	N/A	N/A	N/A	N/A	0.905	0.051	0.186	0.600
1977	N/A	N/A	N/A	N/A	0.900	0.186	0.571	0.500
1978	0.342	0.337	0.340		0.840	0.569	0.593	1.000
1979	0.805	0.203	1.000	0.500	0.807	0.593	1.000	0.500
1980	N/A	N/A	N/A		0.314	1.000	0.495	1.000
1981	1.000	0.493	0.544		1.000	0.490	0.544	0.250
1982	0.263	0.128	0.054	1.000	0.875	0.908	0.636	0.000
1983	N/A	N/A	N/A	N/A	0.486	0.240	0.210	0.300
1984	N/A	N/A	N/A	N/A	0.143	0.211	0.297	1.000
Average	0.603	0.290	0.484	0.750	0.697	0.472	0.504	0.572

\* N/A – No fingerling CWT codes released

Table 15 presents the calculated run sizes using this method and compares them to the run sizes estimated post season. While the general trend in run size is seen , the forecast method usually under predicts compared to the post season estimate. It is recommended further work be done to refine the forecast methodology. The run forecast and in-river harvest schedule are presented in Table 16.

Table 15. Calculated Hatchery Returns and Junction City Run Sizes  
Compared To Actual Post Season Estimates, 1981-1989.

Year	Calculated		Actual	
	Hatchery Return	J.C. Run size	Hatchery Return	J.C. Run size
1981	3808	12530	2405	7913
1982	2472	11557	1226	5731
1983	523	*	930	*
1984	2785	9328	736	2465
1985	3034	9496	2645	8278
1986	3263	10781	7083	23403
1987	3783	20561	8466	46016
1988	8771	39089	13905	61972
1989	6680	33048	5506	27239

\* No Estimate Made by CDFG

Table 16. 1990 Adult Spring Chinook Run Forecast

1990 Spring Chinook return to TRH forecast  
(85-87 finger and year rel pds \* average fing, yearling return/release type) = 3462

1990 Spring Chinook run Above Junction City forecast  
(90 TRH returns)\*(78-89 hatchery run size component) 14154

1990 harvest schedule for Spring Chinook in Klamath Basin

TRH escapement needs 3000 adults.

Trinity River natural spawner escapement goal is 6,000 adults

Yurok Subsistence fishery takes 7% of the Klamath River mouth run size

Hoopa Subsistence fishery takes 9% of the Trinity River mouth run size

Recreational fishery above Junction city takes 13% of Spring Chinook Run

Run size above Junction City is 90% of the Klamath River basin Run size

Klamath escapement is assumed to be 2 per cent of run size at Weitchpec

Lower Trinity Escapement is assumed to be 3 per cent of run size entering Trinity River

Recreational fishery harvest levels in the Klamath and lower Trinity Rivers are not available

Commercial fishery harvest are not presented at this time.

<u>Run size</u>		<u>Harvest</u>			<u>Harvest rate sport and net</u>
Klamath Mouth	15727	Yurok	Subsistence	1138	0.26
Trinity	14297		Commercial		
above J.C.	12625				
		Hoopa	Subsistence	1243	
			Commercial		
<u>Escapement</u>					<u>Escapement rate natural and hatchery</u>
		Karuk	Dip Net		0.74
Klamath	292				
Lower Trinity	429				
Upper Trinity	7781	Sport	Above J.C.	1746	
TRH	3222		Lower Trinity		
			Klamath		

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- U.S. Fish and Wildlife Service. Annual Report. 1988. Klamath River fisheries assessment program. U.S. Fish and Wildlife Service, Fisheries Assistance Office, Arcata, California. 79 p.
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- Hueback, Bill. 1990. Fishery Biologist, California Department of Fish and Game, Arcata, California.
- West, Jack. 1990. Fishery Biologist, U.S. Forest Service, Yreka, California.

Table 17. Range of Klamath River Run-sizes Showing Estimated Harvests and Escapements,  
Using Harvest Rates and Escapement Rates Previously Stated.

Klamath Run-size	Klamath Escape	Trinity Run-size	Indian Harvest	Lower Trinity Escape	J.C. Run-size	Sport Above J.C.	TRH Escape	Natural Escape	Total Escape	Total Harvest
10,000	186	9,114	1,520	228	7,366	958	1,538	4,870	6,822	2,478
15,000	279	13,671	2,280	342	11,049	1,436	2,307	7,306	10,233	3,717
20,000	372	18,228	3,041	456	14,732	1,915	3,076	9,741	13,644	4,956
25,000	465	22,785	3,801	570	18,415	2,394	3,845	12,176	17,055	6,195
30,000	558	27,342	4,561	683	22,098	2,873	4,614	14,611	20,467	7,433
35,000	651	31,899	5,321	797	25,781	3,351	5,383	17,046	23,878	8,672
40,000	744	36,456	6,081	911	29,464	3,830	6,152	19,481	27,289	9,911
45,000	837	41,013	6,841	1,025	33,147	4,309	6,921	21,917	30,700	11,150
50,000	930	45,570	7,601	1,139	36,830	4,788	7,690	24,352	34,111	12,389
55,000	1,023	50,127	8,361	1,253	40,513	5,267	8,459	26,787	37,522	13,628

Table 17a. Forecast For Klamath River Run-size With Varied Net Fishery Harvest and Resultant Harvests and Escapements.

Klamath Run Size	Klamath Escape	Trinity Run Size	Lower Trinity Escape	Indian Harvest	J.C. Run Size	Sport Above J.C.	TRH Escape	Natural Escape	Total Escape	Total Harvest
16,000	298	14,582	398	2432	12,872	1,673	2,912	8,287	11,894	4,106
16,000	282	13,798	371	3362	11,986	1,558	2,711	7,716	11,080	4,920
16,000	266	13,014	343	4291	11,100	1,443	2,511	7,146	10,266	5,734
16,000	250	12,230	316	5221	10,214	1,328	2,310	6,576	9,451	6,549
16,000	234	11,446	288	6150	9,328	1,213	2,110	6,005	8,637	7,363
16,000	218	10,662	261	7080	8,442	1,097	1,910	5,435	7,823	8,177
16,000	202	9,878	234	8009	7,556	982	1,709	4,864	7,009	8,991
16,000	186	9,094	206	8938	6,670	867	1,509	4,294	6,194	9,806

Table 18. 1978-1989 Adult Spring Chinook run size, Harvests and Spawning Escapements.

Constructed using following assumptions and information:

1978-1985 Trinity River run size above J.C. is 75% of entire Klamath basin run size

1986-1989 Trinity River run size above J.C. is 90% of entire Klamath basin run size

Indian harvest pattern in 1978 - 1980 were similar to harvest pattern in 1981-1986, averaged 15% of the run size estimate to that point.

Year	Klamath Run Size	Yurok Harvest	Rec Hrvst Klamath	Trinity Run Size	Hoopla Harvest	Rec Hrvst Lwr Trin	Escap J.C.	Trin Calc J.C.	Run Size J.C.	Rec Hrvst J.C.	TRH Escape	Natural Escape
1978	25088	3763		426	3135		627	17137	18816		1124	
1979	10619	1593		181	1327		265	7253	7964	752	3680	14384
1980	3068	460		52	383		77	2096	2301	1298	1658	5008
1981	10551	1717		177	1090		260	7307	7913	140	547	1614
1982	7641	2440		104	715		153	4229	5731	2146	2405	3362
1983		510			75					637	1226	3868
1984	3287	247		61	380		89	2510	2465	375	736	1354
1985	11037	1074		199	1000		293	8471	8278	736	2645	4897
1986	25743	692		501	2022		737	21792	23403	2949	7083	13371
1987	50618	1646		979	4146		1440	42406	46016	8467	8466	29083
1988	68169	2926		1305	2727		1918	59293	61972	8738	13905	39329
1989	29963	4775		504	1978		741	21966	27239	2152	5506	19581
78-89	22344	1820		408	1581		600	17678	19282	2581	3839	12350
84-89	31470	1893		592	2042		870	26073	28229	3903	6390	17936
1990	15727	1138		292	1243		429	12625	12625	1746	3222	7781

ATTACHMENT 6

March 1, 1990

Sue Masten, Non Hoopa Rep.  
Klamath Fishery Mgmt Council  
PO Box 910, Klamath, Ca 95548

Charles Fullerton, Chairman  
Klamath Fishery Management Council

Dear Mr. Fullerton:

As you are aware, and as was discussed in depth at the last long range planning meeting, the Klamath Fishery Management Council has as its directive under PL 99-552, to "Make recommendations" to the California Department of Fish and Game, the Oregon Department of Fish and Wildlife, the Pacific Fishery Management Council, The Hoopa Tribe, and the Bureau of Indian Affairs regarding their regulations for harvesting anadromous species which originate in the Klamath Basin.

To date, even with the above directive, it appears that the Klamath Fishery Management Council was created for one purpose only; That being to "keep a tight rein" on the Yurok gill net fishery.

While we have made every effort possible to present the Council with our proposed harvest management plans, even before we know what our allocations are, we have yet to see and review the plans for any other fishery at the Council level. This includes state of Oregon, State of California, or in river harvests.

It is difficult for us to understand why the Indian fishery, which occurs in August and September, must come forward with complete regulations in March, while fisheries which start in May have yet to present to the Council their plans for the season. To insure that the management entities are treated equally, we recommend that the Council make it requisite that agencies and states adhere to the mandates of the Council.

We further recommend that the Council review it's procedures and time table, and provide written directives to all management entities in order to cease this discriminatory process.

Sincerely:

Sue Masten

KLAMATH FISHERY MANAGEMENT COUNCIL  
MARCH 1-2, 1990

INITIAL YUROC POSITION STATEMENT

REGARDING THE KLAMATH RIVER SPRING CHINOOK STOCKS

The Yurok Fishers at this point in time are not willing nor prepared to negotiate allocation of Spring Chinook Salmon.

The Bureau of Indian Affairs introduced a test fishery for this fishery in 1989. Due to untimely political opposition to the proposed fishery, it was started too late to be of any significant value for economic information nor for biological data.

The fishery was again presented to this Council in early February of this year, and was deferred to this meeting date.

We consider this, once again to be classified as a test fishery. The number of fish proposed for commercial harvest is not an unreasonable number according to the best available data, and we seek the Council's recommendation to proceed with this test fishery to determine the harvestability and marketability of this stock in the estuary.. We will not enter into negotiations until these factors are determined.

We have taken into consideration all of the biological data available for the protection of the natural component of this stock.

We expect a favorable decision on the Spring Chinook test fishery from the Council at this meeting to avoid the untimely process of last year.

In addition, we suggest that before allocation negotiations proceed that the following data be provided to all users:

1. Information on the River sport fishery impacts on these stocks.
2. Data on the vulnerability of maturing vs. non maturing stocks in the Ocean fishery.
3. Suggested regulations for the Ocean fishery which would protect the natural component of these stocks, as they are currently the primary harvester of Spring Chinook.

KLAMATH FISHERY MANAGEMENT COUNCIL  
MARCH 1-2 1990

INITIAL YUROK POSITION STATEMENT

REGARDING THE KLAMATH RIVER FALL CHINOOK STOCKS

During the negotiations of 1985-86 the Tribes of the Klamath Trinity Basin conceded to a harvest rate sharing plan which would allow them an opportunity to harvest approximately 30 percent of those Klamath origin fall chinook which were available for harvest in any given year. It was stated at the time, and still holds, that Yurok fishers consider that an equitable share of the harvest for the Tribes be at least 50 percent. But, due to economic, biological, and data needs at the time the concession was made for 30 percent.

What has happened in reality is an entirely different matter. The total percentages of user harvest of Klamath origin Fall Chinook stocks, both pre-agreement and post agreement are shown below:

	1979-85 Average	1986-1989 Average
Ocean Harvest	84 percent	80 percent
River Sport	4 percent	5 percent
Indian Harvest	12 percent	15 percent

\* 1986-89 average based on using a preliminary figure of 108,000 for ocean harvest of Klamath stocks in 1989.

We realize that much of the problems in achieving an equitable harvest share for the River fisheries has been due to the past miscalculations of pre-season stock abundance predictions. That is not our major concern, you have not to date heard the Indian community participate in "biologist bashing", nor do we intend to, even though miscalculations have cost the Yurok Tribe and Indian fishers several million dollars. We realize what a difficult task it is to make predictions with the current available data.

What we are adamantly opposed to, is the pre-season arbitrary and capricious nature of the allocation process.

Keeping the negotiated harvest rate shares in mind, ocean .325, River .525: In 1987 the PFMC chose to raise the harvest rate in the ocean to .35 while holding the River to .525 at the expense of the spawning escapement; In 1988 the PFMC chose to raise the ocean harvest rate to .39 while holding the River to .525 at the expense of the escapement; In 1989, once the escapement rate was legally fixed, the

PFMC chose to allow an ocean harvest rate of .375, and to arbitrarily hold the River harvest to the numerical level of the previous year, which equated to a harvest rate of .49.

The decision of 1989 alone cost the in River fishers 10,400 fall chinook salmon.

The Yurok people are looking for EQUITY in the 1990 negotiations. Due to extreme shortfalls in our allowable harvest from 1986 through 1989 we insist that the Klamath Council's biological team analyze the effects to the ocean fishery under a harvest sharing agreement of .30/.60 for 1990.

As we make this request, we want all user groups to be aware of the fact that under the current in-river sharing agreements which have been in place, and working well, since 1986- the Yurok commercial harvest of fall chinook would be a mere 10,000 fish. This is in comparrison to commercial harvests of 29,000, 25,000, 25,000 fish respectively in 1987, 88, and 89.

#### WITH REGARD TO PROTECTION OF FOUR YEAR OLD NATURAL STOCKS:

In 1989 the Bureau of Indian Affairs, and the Yurok People made every effort possible to shift the major impact of the commercial gill net fishery off of the natural four year old Klamath fall chinook. This effort was aborted by local politics.

In 1990, once again we will attempt to convince our Indian fishers of the importance of protecting the August run of natural four year old brood, and to shift their efforts to the later running hatchery stocks. But, with this shift in effort, as recommended by the team, we will expect that our harvest rates will be recalculated, resulting in additional allocation of three year old hatchery stocks.

In addition, to offset the possibility of an underestimated prediction of stock abundance, we will consider the possibility of having a "target Harvest" for the September fishery rather than a strict quota, Which may give us the opportunity to harvest any unpredicted over abundance.

We also request that every effort be made to address the issue of over harvest of natural four year old stock by the ocean fisheries. Specifically, that a complete GSI study be conducted on the September near-shore ocean fishery.

KLAMATH FISHERY MANAGEMENT COUNCIL  
MARCH 1-2, 1990

INITIAL YUOK POSITION STATEMENT

REGARDING THE KLAMATH RIVER COHO STOCKS

The Yurok Fishers at this point in time are not willing to negotiate allocations for Klamath origin Coho stocks.

It is also very evident that the data required for allocation is not available at this time.

The Bureau of Indian Affairs will present a draft test fishery plan to the Council in June of 1990 for this species.

As with the Spring Chinook, our fishermen must have the opportunity to assess the harvestability and marketability of this species before negotiations can occur.

We will request data on what the current harvest of this species is in the ocean and the in-river fisheries.

**IN-RIVER/ OCEAN SHARING FOR 1990**  
**Feb 28, 1990**

**Background:**

In 1985-86, and later in 1987, sharing agreements were reached for distribution of the harvest of Klamath fall chinook. These agreements were based on principles and a commitment to working together, and on the basic minimum needs for the different fisheries. The specific numbers agreed to at that time were a reflection of the advice of the technical people based on the data they then had available. Specifically, at that time:

- The ocean fishery outside the KMZ was thought to harvest about a 0.25 share of Klamath stocks for traditional seasons beginning May 1.
- This would leave about a 0.08 share for the ocean fisheries inside the KMZ. It was thought that the general contribution rate inside the KMZ was about 1 fish in 4 that were of Klamath origin, but it was hoped that by selecting certain areas and times, this could be improved upon.
- The in-river people placed a priority upon assured ceremonial needs, subsistence needs, commercial opportunity if possible, and upon assured recreational opportunity. This translated into a need for a certain number of fish. At the time, a harvest share of 0.50 or 0.525 appeared to provide enough fish to meet their needs.

Since the agreements were reached and signed, the technical data and understandings of harvest rates and contribution rates have changed. However the minimum needs for the various fisheries has **not changed**, nor has the need of the resource for a certain spawning escapement rate.

**PROPOSAL**

It is not fair or equitable to expect the ocean troll fishery to shoulder the entire burden for the changes in technical understanding, anymore than it would be fair to expect the in-river people to reduce their expectations to fully assure the minimum needs of the ocean fishery. All fisheries should be proportionally reduced, in order for the needs of the resource to be met, but without any one fishery sharing a disproportionate burden. In terms of 1990 stock sizes, and for specific fisheries this would be:

- KMZ troll plus sport expected a 0.08 share of the Klamath impacts originally. They have actually harvested slightly more than this (0.085, 1986-89 ave). This fishery should target for a .06 to .07 share of the Klamath impacts.
- Outside the KMZ, ocean fisheries expected to harvest 0.25 but have actually harvested 0.40 to 0.42, with varying seasonal restrictions. Seasonal restrictions should be imposed to target a 0.34 share of Klamath impacts.
- With 1990 stock sizes, in-river fisheries expected to harvest 34,000 fall chinook. With proportional reduction this would be 27,000 to 28,000 fall chinook, and still achieve the 1990 escapement goal of 66,000.

This equates to a 20% reduction for each fishery, with ocean/in-river sharing rates of 40/45 or 41/44. This maintains the agreed on escapement rate, and level for 1990 of 66,000 or 67,000 fall chinook.

### SPECIAL CONSIDERATIONS

1. If these levels do not meet Tribal ceremonial and subsistence fishery needs, then special consideration should be given to these needs.
2. If a fishery is able to better utilize its allowable Klamath impacts, it should receive the benefits of this effort.
3. The proposed tribal fishery on spring chinook provides a commercial opportunity but does not have a proven ability to be successful, it is essentially untried. The projected catch levels for this fishery should not be included in the target in-river catch of 27,000 to 28,000 fall chinook. Any Spring commercial harvest will be an addition to this harvest level for 1990.

NOTES ON THE  
KLAMATH FISHERY MANAGEMENT COUNCIL  
IN-RIVER HARVESTER'S MEETING  
ARCATA, CA  
15 FEBRUARY 1990

February 15, 1990.

Sue Masten agreed to chair the meeting. It was agreed the meeting is sponsored by the Klamath Fishery Management Council, rather than the California Department of Fish and Game.

Objectives include:

- o Provide, to California Department of Fish and Game (CDFG), language for a pre-adoption statement of in-river sport fishing regulation options. This is needed for the next meeting of the Fish and Game Commission on 1 March.
- o Clarify and negotiate criteria for proposed in-river harvests.

MEMORANDUM OF AGREEMENT ON LAW ENFORCEMENT.

The MOA was voided by reinterpretation of State law on authorities to cross-deputize law enforcement agents. A new MOA, not including cross-deputization, is expected to be signed by CDFG, BIA, and Hoopa Tribe in March or April.

PROPOSED NET HARVESTS ON THE YUOK RESERVATION.

The following updates and expands on discussions of the Klamath Fishery Management Council on 5-6 February in Brookings.

Lamprey.

This fishery will be conducted mostly with baskets, for sale of live fish. Lamprey may not be covered in the law enforcement MOA. No other discussion of this proposed harvest was requested.

Spring chinook.

(Masten): We provided a written draft harvest plan to KFMC, but other harvesters have not. I intend to write to the KFMC requesting, again, that all proposed spring chinook fisheries be brought to KFMC for timely review. We will bring more detailed plans for our subsistence and commercial spring chinook fisheries to KFMC for review at the spring series of meetings. Both fisheries will be shaped to concentrate on Trinity Hatchery stock. Our letter will also call for collection of needed data on spring chinook.

Discussion:

(Bostwick, DeVol, Odemar, and Waldvogel): Our concerns with the net harvest plan you presented at KFMC include:

- o Opening and closing dates.
- o Provision of passageway for sport boats moving through the estuary to fish perch.

- o Consider tide cycles in setting fishing hours.
- o Concern about bycatch of steelhead, including halfpounders.
- o Magnitude of proposed net catch... can spring chinook stock support the additional harvest? Confused over whether you are asking KFMC to review a catch target for the commercial fishery alone, or for the combination of commercial and subsistence.
- o Adequacy of level of spring chinook net harvest monitoring effort.
- o Problem of marketing salmon <26" in length.

Response (Masten, Tuss, and Robinson):

- o Opening/closing dates: We have revised our plan from what we presented at KFMC. New dates are still tentative pending review by Yurok community.

Dates/times presented to KFMC:

Area I commercial fishery: 28 May - 15 July, or until target is harvested; fishing permitted Tuesday through Saturday, noon to midnight.

Area I subsistence fishery: No opening day regulation; close 15 July; same days/week and hours as commercial fishery while both fisheries are underway.

Driftnets and setnets to fish on alternate days; no mesh restrictions.

Current proposal:

Area I commercial fishery: 15 May - 14 June, days/week and hours as above.

Area I subsistence fishery: No opening day regulation; close April 20; reopen 15 May - 15 July, days/week and hours as above.

(Masten): These restrictions will be hard for us to sell to the community, so are subject to change. The alternative we are offering is basically: continue subsistence spring chinook fishery as in the past, and drop the commercial fishery.

Application of closures in Area II is possible... not sure yet.

- o Bycatch of steelhead. The 1989 spring chinook commercial fishery took an estimated 7 steelhead... don't anticipate much bycatch as long as most nets are 7 - 7 1/2" mesh. If steelhead catch increases, this

will be picked up by weekly reporting of net harvest monitoring, and the net fishery could be modified.

- o Magnitude of proposed catch: (Tuss) As requested by KFMC, we are working with CDFG to refine our 1990 spring chinook run size projection.
- o Adequacy of monitoring: (Tuss) If there is a commercial fishery, we would add one monitoring crew to work in the estuary.
- o Marketing of 22-26" salmon: (Tuss) We estimate that 3-5% of the net catch will be <26". No biological reason not to market these adult fish. They will be marked as net-caught, so can be distinguished in the market from troll-caught.

Fall chinook.

(Masten): Our considerations in drafting the harvest plan submitted to you today:

- o Preserve some kind of commercial fishery in a year of projected low run size.
- o Target on 3-year-olds of Trinity Hatchery origin, minimize harvest of 4s by shifting effort to a late fishery.
- o Stay with the .35/.525 harvest rate combination called for in the five-year agreement.
- o Hope to generate an additional net harvest of 2-3,000 by convincing the Tech Team that vulnerability rate of age 3 fish is higher than has been assumed. This would increase the projected inriver harvest at no cost to ocean harvest, nor to spawning escapement of 4s. Data to support will go to TAT next week.
- o Allocate the inriver harvest share (anticipated to be about 34,000) as per last year's agreement: Meet minimum needs of sport and net fisheries, then allocate any remainder 25%/75% sport/net.
- o Harvest some coho.

(Masten): Our proposed fall chinook harvest plans :

As proposed to KFMC, by Overberg letter of 26 January:

- o Commercial fishery, Area I: Open 14 August, fish until 65% of the catch target is taken... fish Tuesday through Saturday, 7 p.m - 7 a.m. Reopen 10 September until 15 October, Tuesday through Sunday, noon to midnight. No quotas or targets applied to second phase of the fishery. Mesh restricted to 6 1/2" during the second phase, to target Trinity 3s.

- o Subsistence fishery, Area I: Open 31 July, fish 24 hours/day until 6 August, then switch to same days/hours as commercial fishery until the subsistence target is reached.

As we now visualize it (these options have not been reviewed by Yurok members):

- o Commercial fishery, Area I: Open 3 September through 15 October, or until 6500 fish are caught. Fishing would be allowed during the day, to give access to fish on all tides.... as we are concerned about missing the fall chinook... having them leave the estuary before we catch the target. Note that USFWS seine catches drop off after 20 September.
- o Subsistence fishery, Area 1: Open 15 August, fish Tuesday through Saturday, 7 p.m - 7 a.m. until 6500 fish are taken... we anticipate this will take about 3 day's fishing. Reopen 3 September (Labor Day) through 15 October, or until 3500 fish are caught... hours same as commercial fishery.

Response (Bostwick, Waldvogel, Cribbs, DeVol):

- o Concerned about daytime netting in September... it will be less productive anyway, while night netting is occurring. How about 48 hours on, 48 off in September. (Masten): Would consider night fishing only 3-10 September, then open all hours if we have some quota left... this would avoid most sport fishing conflicts.
- o Concerned about gillnetters anchoring in midafternoon.
- o If your plans change after meetings with Tribal members, let Bostwick know. (Masten): We will have our September fishery proposal refined in 2-3 weeks...before next KFMC meeting.

Coho.

(Robinson): We will provide KFMC with a coho harvest plan.

(Bostwick): I am concerned about coho allocation...about effects of late net season on angler harvest of coho.

#### SPORT FISHERY HARVEST PLANS

##### Spring chinook.

(Odemar): Hard to see why KFMC needs a lot of detail on the Klamath sport fishery. That fishery is open year-round, consistently takes about 9-12% of the spring and fall chinook runs. There isn't a lot of detailed management... although we have made closures in Trinity River to protect salmon holding in pools. Hope we can use Craig Tuss' stock evaluation and run size projection as technical basis for a spring chinook sport fishery harvest plan. Our

target would be a sport harvest of about 10% of the projected run, managed by bag limits and gear regulations.

(Masten): Your harvest plan should also say what you propose to do to protect natural stocks... for example, how will you reduce poaching of spawners?

(Robinson): Also need to identify data needs for sport fishery management.

(Cribbs): Any proposed changes in sport harvest regulations must be accompanied by an environmental impact analysis... with long review periods, provisions for public comment. Hope the State can draw on the Yurok/BIA impact analysis.

(Odemar): Don't think changes in Klamath salmon sport regulations are likely for 1990... 1991 more realistic. (Bostwick): But KFMC still needs to know specifics of the 1990 harvest plan, as displayed in angling regulations. Example: Prohibition of angling in tributaries, to protect spawners. (Odemar): I hear the consensus of this group as: no regulation changes needed for 1990 spring chinook river sport fishery.

\*\*\*\*\*

(Cribbs): For 1991 regulation changes, we would need findings of fact from CDFG not later than mid-August 1990, for the late August Commission meeting. Agree with Mel that emergency changes in regulations could be made much later...over a timeline of a few weeks.

\*\*\*\*\*

(Odemar): Would like to see a legal interpretation of Part 460ss2(b) of the Klamath Act... as to how far management agencies need go in submitting proposed harvest plans to KFMC for review.

\*\*\*\*\*

(Masten): We need an impact analysis for ocean harvest of spring chinook as well... CWT data shows this is the largest harvest.

#### Fall chinook.

Much of the above discussion applies to fall chinook as well as spring chinook. No proposals were made for changes in fall chinook sport harvest regulations.

ATTACHMENT 1

ATTENDANCE ROSTER

NAME	REPRESENTING
Virginia Bostwick	In-river sport fisheries
Hal Cribbs	California Fish and Game Commission
Don DeVol	Klamath Task Force
Ron Iverson	U.S. Fish and Wildlife Service
Sue Masten	Non-Hoopa Indians
Mel Odemar	California Department of Fish and Game
Mike Orcutt	Hoopa Tribe
Del Robinson	Bureau of Indian Affairs
Craig Tuss	U.S. Fish and Wildlife Service
Jim Waldvogel	KFMC Technical Advisory Team

MEETING NOTES  
KLAMATH FISHERY MANAGEMENT COUNCIL  
OCEAN HARVESTERS  
EUREKA, CA  
16 FEBRUARY 1990

February 16, 1990.

The third annual meeting of this group was convened by Mel Odemar. Attendees are listed in Attachment 1. Principal expected products of the meeting will be agreement on a desired level of ocean sport harvest in the Klamath Management Zone (KMZ), and agreement on regulatory mechanisms to hold the KMZ sport harvest within desired limits.

Background.

The recommendation of this group last year was a KMZ sport fishery impact of 8-10,000 Klamath chinook. Given contribution rates of Klamath chinook to the KMZ sport harvest in recent years, that impact translated into a KMZ sport chinook harvest of 60-80,000, which became the catch target recommended by this group. The Klamath ocean harvest model predicted a 1989 KMZ sport catch of only 26,000 chinook. Actual catch was about 71,000.

In 1990, Klamath, Rogue and Sacramento fall chinook stocks are estimated to be less abundant than in recent years. The target ocean catch of Klamath chinook is 93,000... down from 138,000 last year. Age 4 chinook are at very low abundance -- ocean stock size estimated at about 40,000. Last year's harvest allocation formula would get 98,000 adults back to the river in 1990, of which 34,000 could be harvested. If the harvest rate combination of the five-year agreement is used, ocean Klamath impact would be held to about 88,000 fish. This is just background, no point in arguing these issues today...let's focus on KMZ sport harvest.

Review of 1989 season.

Scott Boley has some preliminary information on 1989 KMZ Klamath impacts by time-area cell... indicates need to limit harvest in July and August, when impacts are highest. These may contain some errors of calculation:

<u>Month</u>	<u>KMZ sport catch</u> <u>KMZ Sport Catch</u>	<u>Klamath contribution</u> <u>rate (%)</u>
May	2519	15.8
June	14178	13.5
July	39731	30.7
August	13427	20.0
Sept	<u>1234</u>	12.0
Total	71089	

Joe Lesch provided a graph of cumulative catch, against time, for the KMZ sport fishery. (Attachment 2).

Noteworthy features of the 1989 KMZ sport catch:

- o Much higher impact on Klamath chinook than expected. Klamath model predicted an impact of 6-7,000, versus a post season estimate of 17,400.
- o Heavy catch in July, with high Klamath contribution rate.
- o Skewed age structure: 3-year-old age group was very weak.
- o Unusual geographic distribution of catch: 2/3 in California ports, as opposed to typical 50/50 California/Oregon.
- o Estimated harvest rate on Klamath 4s was 44%. This needs to be brought down in 1990 to 33-34%.

Comments:

- o Don't like to see the sport fishery penalized by having 1989 data included in the Klamath model database... it was an atypical year.
- o Don't understand why the model uses only data of most recent 3 years. Fish abundance appears to cycle, so maybe data from years ago is a better predictor of next year than is recent data. (Martin): Two problems with this: Estimates of ocean stock abundance only go back a few years; and fishing effort -- the strongest connector between stock abundance and harvest -- is very different now in the KMZ from that of years ago. Our model predicts the abundance of the three major stocks, then uses the recent historic catch mix to predict how these stocks will appear in the 1990 catch.
- o Considering how far off the model was in predicting Klamath impacts of the KMZ sport fishery, wish we could get away from managing by this model.
- o Don't agree with biologists that 3s were at low abundance last year...outside the KMZ, many chinook were small. (Odemar): Estimate of Klamath age structure was based on coastwide data... we are confident that abundance of 4s will be low in 1990.

Predictions for 1990 (Odemar and Boley).

Following are Klamath impacts predicted for the 1990 KMZ sport fishery by the Klamath ocean harvest model. Numbers are preliminary and contain errors.

<u>Month</u>	<u>Harvest of Klamath 3s</u>	<u>Harvest of Klamath 4s</u>
Fall 89		90
May	75	32
June	1057	151
July	2844	1166
August	<u>1166</u>	<u>225</u>
Total	5142	1664

The model predicts a KMZ sport catch of 18-19,000, for a Klamath contribution rate of 32-33%. Note that greatest Klamath impacts are predicted to be in July and August.

1990 issues and concerns.

- o Runs should be bigger after all the money invested, yet they aren't. Looks like mismanagement by agencies. (Response): Trend of major chinook runs is, in fact, upward.
- o Sea lion take of salmon is excessive...their population should be reduced.
- o (Hayden): Note handout (Attachment 3) indicating that, while the KMZ sport catch of Klamath chinook increased in 1989, it was still a small factor in the total harvest of Klamath falls.
- o On the other hand, the ocean fishery would have met the target .37 harvest rate except for the runaway KMZ sport fishery
- o We didn't do badly in meeting the ocean harvest rate target last year... we're not too far off... so let's not be negative about trying again this year. KMZ ocean harvesters have a good record in reaching agreement and getting those agreements enacted into regulations. Let's continue our successes.
- o All fisheries will be down in 1990. KMZ anglers should accept that they may be held to an impact of 6-7,000 Klamath chinook.
- o Believe there were lots of salmon in the ocean in 1989 that were never contacted by the limited fisheries. (Martin): Disagree...no reason to think there were significant numbers of unaccounted fish. If they weren't harvested, they should have appeared in the river.
- o Harvest rate management caused pain in the Coos Bay troll fishery in 1989. Sport anglers should be willing to share the constraints.

- o Foresee that KMZ sport fishery management in 1990 should be similar to 1989, with some alterations to account for the big July impact on Klamath stocks.
- o Concerned about statements to the media on big sport fishery impacts... such as what was said at the Fishermen's Forum. Much of this stuff seems to come from the troll industry.
- o KMZ ports will again be concerned about maintaining reasonable troll landings. Humboldt Bay Harbor District has resolved that the troll fishery should not be unfairly reduced in the KMZ.
- o Concerned about reduction in late fisheries accessible from Brookings. These fisheries benefit day boats and have relatively little Klamath impact.
- o See no reason to end the KMZ sport fishery in September... most Klamath fish have left the ocean by then.

Development of options for 1990 KMZ sport fishery.

Jim Martin summarized options available for management, including positive and negative features:

One-salmon bag: Really works to dampen harvest.... but hurts charter industry, and encourages high-grading.

Coho/chinook ratio in daily bag: Works well if there are enough coho to fill the bag... works well with charterboats, but some problem with skiff anglers distinguishing species. Ratio fishery can be applied to just those parts of the season where coho are reasonably abundant. Another refinement is trigger dates.

Closure of various days/week: Used north of Cape Falcon. Weekend closings really dampen harvest... closing one weekend day can cut harvest 20%.

Limiting weekly bag: Keeps fish hogs from loading up, but hard to enforce because there are many ways to cheat. There is little cheating with generous limits, more with restricted limits. Effectiveness as a harvest dampener?

Opening/closing dates: In Oregon, it is attempted to provide the "minimum need" season, and extend as appropriate.

Area closures: Such as off Klamath mouth.

Annual bag limit: Was proposed by CDFG for north California coast, but lacked public acceptance.

Oregon proposal.

Martin and Wilkinson displayed the following management elements proposed for the KMZ by Oregon interests:

Season:

Open Memorial Day, close Labor Day weekend.

Bag limits:

Memorial Day - 1 July: 2 chinook/day.

1-31 July: 2 salmon/day, not more than one chinook.

1 August - close: 2 chinook/day.

Rationale:

Simple.

Dampening occurs during the period of significant Klamath impacts.

Provides local economic benefits.

Avoids perception of runaway sport fishery.

California proposal.

Bob Hayden made the following proposal:

Season:

Open 1 May, close 1 October.

Bag limits:

Bag limit of 2 chinook, except impose a ratio fishery of 2 salmon, maximum of one chinook, from 1 July - 15 August.

Rationale:

Assured long season.

Klamath impact dampened during appropriate period.

Permits access (early and late) to other stocks.

Simple.

Comments on proposals.

- o (Boley): Believe both proposals would model out to about the same Klamath impact.
- o Both proposals lack reference to trigger dates... assume this is to minimize confusion, and uncertainty about when the bag limit regulation will change.
- o How about moving the ratio fishery earlier... may not be enough coho after mid-July. Response (Martin): Either proposal would pick up coho... have seen good coho abundance into August in recent years.
- o (Wilkinson): We favor the July ratio fishery, because it affects both parts of the KMZ about equally... whereas August dampening affects Oregon more. Response (Odemar): Salmon Tech Team may feel your proposal doesn't provide enough dampening.
- o The early opener of the California proposal will give California sports access to coho that will have to be taken from Oregon harvests, because the projected OPI coho abundance is down from 1989. Response (Odemar): Coho catch south of Blanco is down in recent years, because of KMZ troll restrictions. Rebuttal (Boley): True for troll but not sport. Anglers in northern Oregon were upset about the coho harvest by the big KMZ sport fishery in 1989. Hayden's proposal for a late closure would allow sport catches after sports are shut down to the north.
- o Trollers are allowed special late fisheries in the KMZ, and we need to allow a late season for sports to maintain a perception of fairness. Response: How about restricting that late sport season to areas where late troll fisheries are allowed. (Martin): Oregon interests would accept such a shaped late season.
- o Concerned about perception of fairness if the early KMZ opener is adopted: sport fisheries to the north don't open that early.
- o (Martin): A possible compromise on season: 1 May to the weekend after Labor Day, with an Eel River extension to 1 October, and a possible Chetco extension into September.
- o (Wilkinson): Would be willing to extend the ratio fishery to mid-August, if California would give up the early season.
- o Is the late season proposed by California interests intended to get what the trollers have, or to harvest fish? (Walters): To harvest fish. Late harvests are fairly clean of Klamath fish.
- o (Hayden): Regarding late season, how about compromising on closing date of 9 September...

Compromise proposal.

Following are features of a compromise between the California and Oregon management proposals:

Open 1 May, close 9 September, with a special Eel River fishery through 31 October and a possible Chetco extension into late September.

Bag limit 2 chinook/day, 6 in 7 days, except a ratio fishery from 1 July to 15 August, 2 salmon/day, no more than one chinook.

Discussion of the compromise included:

- o Discussion of the ratio fishery: Will it be rendered ineffective by inability of tourists to distinguish species?  
Response: No. People can be educated.
- o Discussion of harvest targets. (Martin): This group seems to want to manage by season and dampeners, and let the harvest target or Klamath impact target be whatever the technical people estimate this season will produce. (Boley): The Tech Team will multiply time/area Klamath contribution rates -- averaged for the last four years -- by the projected Klamath chinook stock size, and factor in increased dampening to project a KMZ sport fishery catch.
- o (Matson): Compromise looks workable, but if the Tech Team finds it doesn't leave enough fish for a KMZ troll fishery, I can't sell it to my constituents. Response (Boley): The compromise will probably model out to an impact of 5-6,000...much smaller than last year's sport impact.
- o We can expect PFMC criticism of the ratio fishery on grounds of excessive hooking mortality. Response (Wilkinson): peer pressure and education should reduce sorting. (Johnson): People can also be educated to adjust fishing depth to target species.
- o (Martin): Believe we can sell this compromise to KFMC and PFMC. We will need user group testimony to support in PFMC public meetings, because there will be opposition from northern ports.
- o Need to get support of skiff anglers and RV park operators.  
(Wilkinson): We contacted these groups in Oregon.
- o (Boley): Congratulations to user group representatives for the networking you did with constituents prior to this meeting.

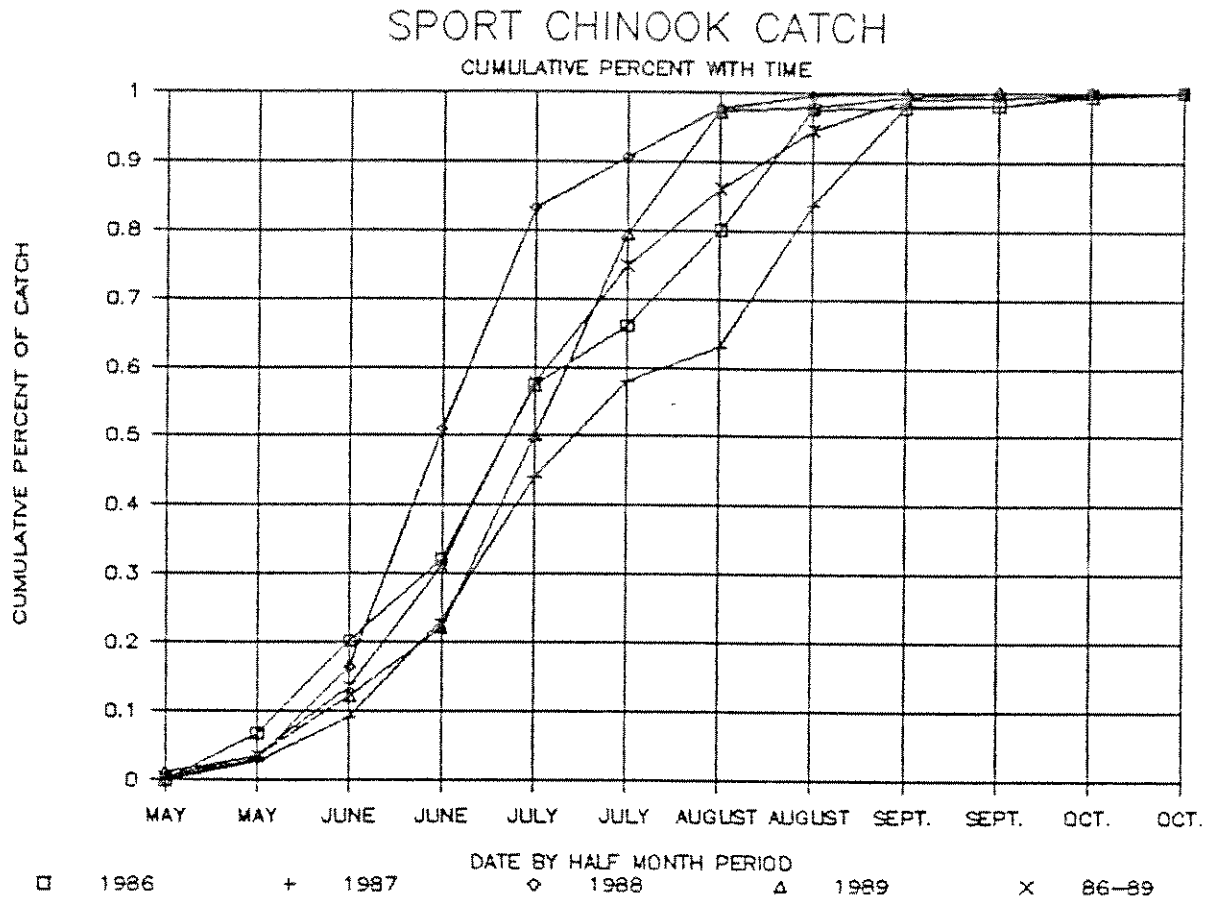
Adjourned.

# ATTACHMENT 1

## ATTENDANCE ROSTER

### NAME

P. E. Adkins	Eureka, CA	
Carol Davis	Brookings, OR	
Tom Davis	Brookings, OR	
Bob Hayden	Laytonville, CA	Cal Ocean Sport Fishery
George Jewell	Fortuna, CA	
Jim Johnson	Coos Bay, OR	Oregon Toller
Tom Jones	Eureka, CA	
Joe Lesh	Eureka, CA	Cal Dept of Fish & Game
Jim Martin	Portland, OR	Ore Dept of Fish & Wildlife
Bill Matson	Eureka, CA	PCFFA
Mike Morford	Willits, CA	
Mel Odemar	Sacramento, CA	Cal Dept of Fish & Game
Dennis Pecaut	Eureka, CA	
Art Rogers	Fortuna, CA	
Gene Schnell	Eureka, CA	
Maurice Viand	Fields Landing, CA	HFMA
Richard Walsh	Eureka, CA	
Jim Walters	Eureka, CA	Ocean Recreational Fisher
Keith Wilkinson	Brookings, OR	Klamath Fishery Mgt Council



Statistics presented above represent klamath ocean Management Zone chinook salmon landings in the recreational ( charter and skiff ) fishery at Eureka/Trinidad, Crescent city, and Brookings.

KLAMATH RIVER FALL CHINOOK

HARVEST AND ESCAPEMENT

	<u>Total Ocean Catch</u>	<u>KMZ Sport Catch</u>	<u>Inriver Sport Catch</u>	<u>Indian Net Catch</u>	<u>Spawning Escapement</u>
1986	336,227	6,291	21,027	25,127	146,251
1987	325,204	11,124	20,169	53,093	130,840
1988	206,096	8,411	15,805	51,651	113,644
Average	289,176	8,609	19,000	43,290	130,245
1989	107,700	17,400	9,831	55,396	67,079

# 1990 CALIBRATION

ATTACHMENT 10

KLAMATH OCEAN HARVEST MODEL  
RUN DATE 2-28-90

VERSION: 12.1  
TIME: 14:23

EXPLOITATION RATE CHANGE FROM BASE PERIOD: a(j,k)

	FALL	MAY	JUNE	JULY	AUGUST
NOR	1.00	1.00	1.00	1.00	1.00
CSB	1.00	1.00	1.00	1.00	1.00
KMZ-T	1.00	1.00	1.00	1.00	1.00
KMZ-S	1.00	1.00	1.00	1.00	1.00
FTB	1.00	1.00	1.00	1.00	1.00
SOC	1.00	1.00	1.00	1.00	1.00

KLAMATH INRIVER ESCAPEMENT	79800
OCEAN LANDINGS	121400
AGE 4 KLAMATH HARVEST RATE	50.2%

KLAMATH LANDINGS - ESTIMATES: L(ijk)

AGE 3	FALL	MAY	JUNE	JULY	AUGUST	TOTAL
NOR	10	10	160	680	810	1670
CSB	180	1170	2620	7940	14470	26380
KMZ-T	390	320	8140	2560	3370	14780
KMZ-S	30	80	1090	3540	1380	6120
FTB	60	3770	7730	17400	3280	32240
SOC	0	3120	7970	5080	890	17060
AGE3 TOT	670	8470	27710	37200	24200	98250
AGE 4	FALL	MAY	JUNE	JULY	AUGUST	TOTAL
NOR	120	80	30	200	120	550
CSB	180	790	680	2690	1130	5470
KMZ-T	540	260	1730	680	480	3690
KMZ-S	40	30	150	620	270	1110
FTB	0	1460	1860	2220	320	5860
SOC	0	860	1900	620	60	3440
AGE4 TOT	880	3480	6350	7030	2380	20120
AGE3+4	1550	11950	34060	44230	26580	118370

CATCH PROJECTIONS BASED ON EXPLOITATION RATE SHIFTS: a(i,j)\*C(i,j)

	FALL	MAY	JUNE	JULY	AUGUST	90 TOT
NOR						
CSB						
KMZ-T	11300	3100	24400	7600	11300	46400
KMZ-S	1200	900	7000	10500	4700	23100
FTB						
SOC						
TOTAL						

# 1989 SEASON STRUCTURE

KLAMATH OCEAN HARVEST MODEL  
RUN DATE 2-28-90

VERSION: 12.1  
TIME: 15:25

EXPLOITATION RATE CHANGE FROM BASE PERIOD:  $a_{(j)k}$

	FALL	MAY	JUNE	JULY	AUGUST
NOR	1.00	1.00	0.83	1.00	1.44
CSB	1.00	1.00	0.83	0.63	0.71
KMZ-T	1.00	1.60	0.66	0.00	0.58
KMZ-S	1.00	1.00	1.00	1.00	1.00
FTB	1.00	0.55	0.43	0.58	1.00
SOC	1.00	1.17	1.19	1.22	1.00

KLAMATH INRIVER ESCAPEMENT	92400
OCEAN LANDINGS	95500
AGE 4 KLAMATH HARVEST RATE	39.9%

KLAMATH LANDINGS - ESTIMATES:  $L_{(ij)k}$

	FALL	MAY	JUNE	JULY	AUGUST	TOTAL
AGE 3						
NOR	10	10	130	710	1310	2170
CSB	180	1170	2180	5220	11200	19950
KMZ-T	390	510	5410	0	2100	8410
KMZ-S	30	80	1100	3610	1510	6330
FTB	60	2080	3340	10470	3580	19530
SOC	0	3650	9550	6480	970	20650
AGE3 TOT	670	7500	21710	26490	20670	77040
AGE 4						
NOR	120	80	30	220	190	640
CSB	180	790	570	1810	920	4270
KMZ-T	540	420	1150	0	320	2430
KMZ-S	40	30	150	640	310	1170
FTB	0	800	810	1350	360	3320
SOC	0	1000	2300	800	70	4170
AGE4 TOT	880	3120	5010	4820	2170	16000
AGE3+4	1550	10620	26720	31310	22840	93040

CATCH PROJECTIONS BASED ON EXPLOITATION RATE SHIFTS:  $a_{(i)j} \cdot C_{(i)j}$

	FALL	MAY	JUNE	JULY	AUGUST	90 TOT
NOR						
CSB						
KMZ-T	11300	5000	16100	0	6500	27600
KMZ-S	1200	900	7000	10500	4700	23100
FTB						
SOC						
TOTAL						

GENERAL OCEAN HARVEST OPTIONS == 1990 SEASON  
EFFORT REDUCTIONS IN COMMERCIAL FISHERY 1/

OCEAN RATE	BLOCK CLOSURES 2/	7 DAY CLOSURES 3/	3 ON/4 OFF CLOSURES 4/	3 ON/4 OFF CLOSURES 5/
0.50	NO CLOSURES 6/	NOT NEEDED	NOT NEEDED	NOT NEEDED
0.40	21 DAYS	7 -7 DAY	16 - 4 DAY	10 - 4 DAY
0.375	28 DAYS	9 - 7 DAY	NOT POSSIBLE	16 - 4 DAY
0.35	38 DAYS	NOT POSSIBLE	NOT POSSIBLE	NOT POSSIBLE
0.30	75 DAYS 7/	NOT POSSIBLE	NOT POSSIBLE	NOT POSSIBLE

1/ CLOSURES APPLIED TO HORSE MT - POINT ARENA SOUTH OF THE KMZ AND CAPE ARAGO - HUMBUG MT NORTH OF THE KMZ WITH ONE HALF OF THE EFFORT FROM CLOSED AREAS SHIFTED TO ADJACENT AREAS. KMZ QUOTA SET AT 25000.

2/ CALCULATED AS FULL EFFORT REDUCTION ASSUMING THE CLOSURE IS CONTINUOUS.

3/ CALCULATED AS 5 DAYS OF EFFORT REDUCTION FOR EACH 7 DAY CLOSURE.

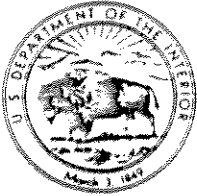
4/ CALCULATED AS 2 DAYS OF EFFORT REDUCTION FOR EACH 4 DAY CLOSURE.

5/ CALCULATED AS 3 DAYS OF EFFORT REDUCTION FOR EACH 4 DAY CLOSURE.

6/ KMZ QUOTA 46000.

7/ NO KMZ QUOTA.

3/1/90 KRTAT



United States Department of the Interior  
FISH AND WILDLIFE SERVICE

Klamath Field Office  
P.O. Box 1006  
Yreka, CA 96097-1006

March 5, 1990

Mr. Richard Schwarz  
Chairman, Pacific Fishery Management Council  
2000 S. W. First Avenue, Suite 420  
Portland, Oregon 97201

Dear Dick:

I am writing to inform you of actions taken by the Klamath Fishery Management Council, during their meeting of 2 March 1990, pertaining to proposed harvest of Klamath River basin chinook stocks in 1990. Please consider these actions in formulating options for management of 1990 ocean salmon fisheries.

Spring chinook salmon.

The Klamath Council reviewed a proposal, presented by the Bureau of Indian Affairs and the Yurok Tribe, with endorsement by the Hoopa Tribe, for a commercial test fishery to be conducted in lower Klamath River in 1990. Specifics of the proposal include:

- o Commercial net fishery to commence on 28 May 1990, and to close 15 July.
- o Fishery to be conducted in Management Area I (Klamath estuary) with gillnets.
- o Target Indian net harvest of spring chinook, including Yurok subsistence, Hoopa subsistence, and Yurok commercial fishery, to be approximately 6,000 adult salmon. It is anticipated that this target will provide about 2,500 fish for the commercial test fishery.

The Klamath Council endorsed the Yurok/BIA proposal, by consensus.

Fall chinook salmon.

Sport chinook harvest in the Klamath Management Zone.

California and Oregon ocean harvester representatives met on 16 February and arrived at the following proposal for management of a 1990 salmon sport fishery in the Klamath Management Zone:

- o Open 1 May, close 9 September, with a special Eel River fishery through 31 October and a possible Chetco extension into late September.
- o Bag limit 2 salmon/day, 6 in 7 days, except a ratio fishery from 1 July to 15 August: 2 salmon/day, no more than one of which may be a chinook.

The Klamath Council, with one abstention, endorsed this proposal on 2 March.

Ocean fisheries for Klamath fall chinook.

The Klamath Council, with two abstentions, voted to request the Pacific Fishery Management Council to include the following elements in developing options for 1990 ocean salmon management:

- o Consider a range of total ocean harvest rates, for fully-vulnerable Klamath chinook, of 0.35 to 0.42.
- o Consider stock abundance in selecting base years for calculating contribution rates of Klamath chinook in various ocean time/area cells; and, if appropriate, use a different base than the average of the most recent four years in modelling the 1990 season.
- o Consider the KMZ sport fishery recommendations presented above.
- o Consider block time closures, weekly closures, and days/week closures as possible measures for dampening troll catch of Klamath chinook
- o Maximize the KMZ troll fishery, consistent with stock conservation and consideration for basic needs of other harvester groups.
- o Consider the projected decline in harvest of non-Klamath chinook stocks caused, in part, by the need to conserve Klamath chinook stocks.
- o Consider the social and economic impacts of projected declines in sport angling, Indian subsistence and commercial harvests, and ocean troll harvest anticipated to result from low abundance of Klamath chinook in 1990, including effects on KMZ ports.

Thank you for your consideration of these issues. The Klamath Council will meet again on March 31 and April 1 to review ocean harvest options promulgated by the Pacific Council.

Sincerely,

*E. C. Fullerton*

E.C. Fullerton, Chairman